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MANUAL OF BOTANY,

C.

FOR

NORTH AMERICA:

CONTAINING

GENERIC AND SPECIFIC DESCRIPTIONS OF

THE INDIGENOUS PLANTS AND COMMON CULTIVATED EXOTICS,

GROWING

NORTH OF THE GULF OF MEXICO.

L. H. Alexander

BY PROF. AMOS EATON.

"THAT EXISTENCE IS SURELY CONTEMPTIBLE, WHICH REGARDS ONLY THE GRATIFICATION OF INSTINCTIVE WANTS, AND THE PRESERVATION OF A BODY MADE TO PERISH." *Linneus.*

FIFTH EDITION.

REVISED, CORRECTED, AND MUCH EXTENDED.

ALBANY:

PRINTED BY WEBSTERS AND SKINNERS,

At their Bookstore, in the White House, corner of State and Pearl Streets.

1829.

NORTHERN DISTRICT OF NEW-YORK, ss.

L.S.

BE IT REMEMBERED, That on the twelfth day of January, in the fifty-third year of the Independence of the United States of America, A. D. 1829, WEBSTERS and SKINNERS, of the said district, have deposited in this office, the title of a book, the right whereof they claim as proprietors, in the words following, to wit:

"A Manual of Botany, for North America; containing generic and specific Descriptions of the indigenous Plants and common cultivated Exotics, growing north of the Gulf of Mexico. By Prof. Amos Eaton. Fifth Edition, revised, corrected and much extended."

In conformity to the act of the Congress of the United States, entitled "an act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned," and also to the act entitled "an act supplementary to an act entitled an act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

RICHARD R. LANSING,
Clerk of the Dis. Court of U. S. for the N. District of New-York.

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NOTICES.

BOTANICAL DISTRICTS.

The Northern and Southern districts are separated by a line drawn from the mouth of the Delaware river (N. Lat. 39°—W. Lon. 75°) in a direction to intersect the south end of lake Michigan (N. Lat. 41° 30′)—leaving all Pennsylvania and the north part of Delaware, of Maryland, and of Ohio, in the Northern district. This direction of the division line is required, because southern plants extend to higher latitudes on the western side of the Allegany range, than on the eastern side.

Plants of the Northern district are set at the head of the genera under each order or section, and at the head of the species under each genus. Exotics stand next; and plants of the Southern district last.

A plant of the Northern district, which grows in the Southern district also, is marked with the letter S, at the end of the description.

The letters E and W are used, within the parenthesis following the specific names, to denote that the plant is found in the Eastern or Western division of either of the districts.

The Allegany mountain is the division line in the Southern district; a line drawn from the intersection of the Allegany mountain and the river Potomack, in the direction of Cayuga lake, is the division line in the Northern district.

The letter O, *(omnibus locis)* indicates, that the plant is common to the whole district.

The letter A, *(alpine)* indicates, that the plant is most common on mountains or other highly elevated places.

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The letter L, *(littoribus)* indicates, that the plant is most common at or near the seashore.

Particular localities will be referred to places by name. Few such cases, however, will occur.

Miscellaneous Notices.

The alphabetical arrangement of genera, under which species are described, presents numerous advantages. One inconvenience, however, has hitherto attended this method. It arose from the difficulty of distinguishing the genera in some of those classes which include very natural assemblages of them; such as those of the classes Didynamia, Tetradynamia, Diadelphia, &c. Consequently we are obliged to resort to the characters of the species under several of the nearest genera; which are widely separated by the alphabetical arrangement. To obviate this difficulty, the name of the next genus, in the arrangement of genera, is set at the end of the last specific description; which will enable the student to follow the species of genera, as set down where they are described. For example, the student supposed his plant to be a Sium; but could not make it agree with any of the species. At the end of the description of the last species, he would find Cicuta, which is the next genus. He would turn to that and proceed through the species; and at the end of the last find the name of the next genus, &c. &c.*

* For improvements in localities, arrangements, additional materials, &c. I am chiefly indebted to the works of Pursh, Elliot, Torrey, Dewey, Nuttall, Bigelow, Darlington, James, Beck, Halsey, Schwinitz, Schoolcraft, De Kay, and Brace. Also to the labours and manuscript communications of many zealous friends of the science. Among other favours of this kind, Doctors Pitcher and Cooley furnished me with extensive catalogues, mostly accompanied with specimens, of the plants of the Michigan and Northwest territories. Dr. Emmons furnished me with the result of his investigations in the Cryptogamous class in the western part of Massachusetts. My deceased son, Timothy Dwight Eaton, left in manuscript his minute investigations along the Erie canal line, accompanied with specimens. Messrs. G. W. Clinton, J. Eights, and W. Akin, have furnished occasionally very acceptable materials. Several officers of the U. S. Army have contributed interesting localities. This class of citizens are becoming very zealous in the cause of natural science; and will, probably, soon take the lead in this department of human knowledge.

The generic descriptions are considerably enlarged in this edition; but some of the specific descriptions contain fewer words. In such cases, the terms used are more definite and expressive; but in no case have I omitted a character, which was of any use in the description. In difficult and doubtful cases, the specific descriptions are enlarged. As the learner always commences with comparing generic and specific descriptions with plants, which he has labelled from the mere *dictum* of his teacher, such condensed descriptions are most favourable to his progress.

For a mere pocket manual and school book, every experienced collecter and teacher feels the want of a more extended system. Every where west of Cayuga lake, plants of a southern character extend to higher latitudes than they do farther east. But the most important object in this extension of the Manual to the Southern and Western states, is, to furnish the student with a convenient book for examining plants received from distant states by way of exchange. For, I presume, there is not a Northern or Southern botanist, but exchanges plants with very distant correspondents.

NORTH AMERICAN PHENOGAMOUS GENERA.

139 genera peculiar to the Northern district.
203 genera peculiar to the Southern district.
438 genera common to both districts.
780 genera are indigenous to North America.
85 genera of Exotics include those commonly cultivated.
865 genera are all, that may be expected by the student in North American Phenogamous Botany.

NORTH AMERICAN CRYPTOGAMOUS GENERA.

28 genera of Filices include the whole.
43 genera of Musci include about all the proper Mosses.
4 genera of Hepaticae include the Hepatic Mosses.
17 genera of Algae include about all that order.
33 genera of Lichenes include about all that order.

55 genera of Fungi include about all that order.

180 genera of Cryptogamous plants are described in this Manual. But, excepting Filices, the plants of this class require much improvement.

1045 genera are described in this Manual. See end of species.

The star (*) is placed before generic names set at the end of orders or of sections, to denote that they must be referred to their proper places by the aid of the alphabetical arrangement of the genera. Such plants separate themselves from their natural associates by varying from the artificial character.

Directions for Studying Plants.

We should always label our plants, before we put them in press between sheets of paper. If we have doubts as to the generic or specific name, we should annex the interrogation character, and take time for a more critical examination.

Several specimens of a species should be collected for analysis, and set into water pots. These will be suitable for examination for several days; and some plants will remain in bloom a week or more. But all specimens which are to be preserved by absorbing the moisture contained in them with bibulous paper, should be collected when dry, and preserved without immersing any part of them in water.

Small plants, and all sizes of species which crisp readily on being collected, should be put between the leaves of a port folio in the field. Others may be collected in a tin box—the common tin candle box is well adapted to this purpose.

Those who intend to become authors of botanical treatises, should collect large specimens. But small specimens are sufficient and most convenient, when the object is merely to refresh the recollection of a plant. In the former case, plants must be put up in large folio—in the latter case, pocket duodecimos are best. Duplicates, triplicates, &c. should be collected and preserved, of all scarce plants, or of those which are

peculiar to a few districts. By this measure useful exchanges may be made, and the science improved.

Specimens of all stages of growth and maturity should be collected in the most natural families; such as the umbelliferous, labiate, cruciform, papilionaceous, syngenesious, &c. because the unopened and opened flower, the immature and mature pericarp, seed, &c. are often required in the analysis of a plant belonging to such natural assemblages.

In cases of doubt and difficulty, we must collect specimens in all stages of growth and maturity; but we may generally ascertain the genus and species without the developement of all the characters. This may be effected by an examination and comparison of all the descriptions in an order or section, so far as to exclude the plant under consideration from all the genera or species but one. This one may be assumed for the time; and the plant so labelled.

We should never presume that the plant under examination is not described. Such a decision requires much reflection and good advice. Many vain botanists are continually in search of new species; and their vanity leads them into gross absurdities. Hence we see some of our ambitious botanists perpetually offering new species to the scientific public; which they are compelled as often to retract. There is not, probably, 50 undescribed species of Phenogamous plants in the United States—perhaps not one species, east of the Mississippi. But many plants are still badly described; and every botanist should aid in correcting errors and deficiencies.

This may be received as the result of universal experience. "No one can be a botanist, without collecting plants and mak-
"ing up an herbarium with his own hands."

To prepare for analyzing a plant, the student should study the seven elementary organs, as defined by Linneus. The stamens and pistils must be carefully examined. The plant may then be referred to its place among the classes and orders. In

case of doubtful terms, the grammar of botany must be perpetually referred to. But in most cases, the annexed synopsis will be sufficient, after studying the grammar of botany, or any other elementary system.*

As the study of plants by their natural affinities is essential to a knowledge of the science of vegetables; a reference to the natural order, to which every plant belongs, is set down, in a corresponding number, at the end of the generic description. The natural orders and the sub-orders are described in the grammar. But for hasty reference I have inserted the names, some examples, and the general properties of each order, in a compact form, in this introduction.

AMOS EATON.

Rensselaer School, Troy, Jan. 12. 1829.

* Mrs. Lincoln, of Troy Female Seminary, is preparing a familiar elementary system. Prof. Locke's little Treatise is valuable. Mr. Nuttall has lately compiled a larger work of this kind. Mr. Sumner's Compendium contains much important matter.

SYNOPSIS OF ARTIFICIAL CLASSES AND ORDERS.

	Classes.	Orders.
Number of Stamens.	1. MONANDRIA, 1 stamen. 2. DIANDRIA, 2. 3. TRIANDRIA, 3. 4. TETRANDRIA, 4. 5. PENTANDRIA, 5. 6. HEXANDRIA, 6. 7. HEPTANDRIA, 7. 8. OCTANDRIA, 8. 9. ENNEANDRIA, 9. 10. DECANDRIA, 10.	Number of styles; if styles are wanting, number of sessile stigmas. Monogynia, 1 style or 1 sessile stigma. Digynia, 2. Trigynia, 3. Tetragynia, 4. Pentagynia, 5. Hexagynia, 6. Heptagynia, 7. Octogynia, 8. Enneagynia, 9. Decagynia, 10. Polygynia, any number over 10.
Number and Position.	11. ICOSANDRIA, over 10 stamens, on the calyx. 12. POLYANDRIA, over 10 stamens, not on calyx.	
Number and relative Length.	13. DIDYNAMIA, 4 stamens, 2 of them longest. 14. TETRADYNAMIA, 6 stamens, 4 of them longest.	1. Gymnospermia, seeds naked. 2. Angiospermia, seeds in capsules. 1. Siliculosa, pod short. 2. Siliquosa, pod long.
Connexion of the Stamens by filamets or anthers.	15. MONADELPHIA, filaments united in 1 set. 16. DIADELPHIA, filaments united in 2 setts—papilionaceous. 17. SYNGENESIA, anthers united—flowers compound.	Characters and names of preceding classes. As, 1. Monandria, 2. Diandria, 3. Triandria, 4. Tetrandria, 5. Pentandria, 6. Hexandria. Disk and ray florets compound. 1. Aequalis, 2. Superflua, 3. Frustranea, 4. Necessaria, 5. Segregata.
Position of the Stamens relative to the Pistils.	18. GYNANDRIA, stamens on the pistil, distant from coral. 19. MONOECIA, stamens in flowers separate from pistils, on the same plant. 20. DIOECIA, stamens in flowers separate from pistils on separate plants.	Characters and names of preceding classes, (as under the classes 15 and 16.) 7 Heptandria, 8. Octandria, 9. Enneandria, 10. Decandria, 12. Polyandria, 16. Monadelphia.
Invisible or Caducous.	21. CRYPTOGAMIA, stamens invisible, wanting, or very caducous.	Natural families. 1. Filices, 2. Musci, 3. Hepaticae, 4. Algae, 5. Lichenes, 6. Fungi.

OMITTED CLASSES.

The classes of Linneus, called Dodecandria, Polyadelphia, and Polygamia, are omitted; and their respective genera are distributed among other classes. For the Dodecandria is a small class and the character variable. The Polyadelphia is exceedingly variable, and not necessary. The Polygamia is inconstant in its character, and the plant may be classed by the perfect flowers. See each of these classes and their respective orders in the Botanical Dictionary, accompanying or attached to, this Manual, under the words REJECTED CLASSES and REJECTED ORDERS.

NATURAL ORDERS OF JUSSIEU.

ACOTYLEDONOUS PLANTS.

Names.	*Examples.*	*Properties.*
1. Fungi.	Mushroom, mould.	*Tonic* if dry, *narcotic* if juicy.
2. Algae.	Lichen, conferva.	*Tonic*, some used in *dying*.
3. Hepaticae.	Brook liverwort.	*Tonic, refrigerant.*
4. Musci.	Proper mosses.	*Tonic*, rarely cathartic.
5. Filices.	Brakes, polypod.	*Secernant stimulants.*
6. Naiades.	Duck meat.	*Astringent.*

MONOCOTYLEDONOUS PLANTS.

Class I. *Stamens below the pistil.*

7. Aroideae.	Wild turnip.	*Warming stomachic* and *antispasmodic.*
8. Typhae.	Cat tail.	*Weak tonic.*
9. Cyperoideae.	Sedge grass.	*Tonic*, coarse cattle fodder.
10. Gramineae.	Timothy grass.	*Tonic, farinaceous*, cattle fodder.

Class II. *Stamens surrounding the pistil.*

11. Palmae	Date, cocoanut.	*Weak tonic, farinaceous.*
12. Asparagi.	Solomon seal.	*Secernant stimulant, mild tonic.*
13. Junci.	Sweet flag.	*Secernant stimulant, antiscorbutic.*
14. Liliaceae.	Tulip, addertongue.	*Emollient*, weak *secernant stimulant*
15. Bromeliae.	Pine-apple.	*Refrigerant.*
16. Asphodeli.	Onion, hyacinth.	*Expectorant, tonic, cathartic.*
17. Narcissi.	Daffodil.	Weak *tonic, emollient.*
18. Irides.	Iris, blue-eyed-grass.	*Antiscorbutic, tonic.*

Class III. *Stamens on the pistil.*

19. Musae.	Bread-tree.	*Tonic.*
20. Cannae.	Ginger.	*Warming stomachic.*
21. Orchideae.	Ladies' slipper.	*Emollient, stomachic, farinaceous.*
22. Hydrocharides.	Tape-grass.	*Weak tonic.*

DICOTYLEDONOUS PLANTS.

Section first, Flowers apetalous.

Class I. *Stamens on the germ.*

23. Aristolochiae.	Wild ginger.	*Tonic, warming stomachic.*

Class II. *Stamens surrounding the germ.*

24. Aeleagni.	Pepperage tree.	*Week tonic.*
25. Thymeleae.	Leather-wood.	Mild *emetic, antiscorbutic.*
26. Proteae.	Silver tree.	Weak *tonic.*
27. Lauri.	Sassafras.	*Secernant stimulant, stomachic.*
28. Polygoneae.	Dock, rhubarb.	Mild *cathartic, antiscorbutic.*
29. Atriplices.	Beet, pokeweed.	*Aperient, cathartic.*

Class III. *Stamens below the germ.*

30. Amaranthi.	Cock's comb.	*Weak tonic, secernant stimulant.*
31. Plantaginea.	Plantain.	*Emollient.*
32. Nyctagines.	Four-o-clock.	*Cathartic, emetic.*
33. Plumbagines.	Sea-lavender.	*Cathartic, tonic.*

Section second. Flowers monopetalous.

Class IV. *Corols below the germ.*

34. Lysimachiae.	Loosestrife.	Weak *tonic, secernant stimulant.*
35. Pediculares.	Snakeroot.	*Tonic, cathartic.*

Names.	*Examples.*	*Properties.*
36. Acanthi.	Malabar nut.	*Emollient*, weak *tonic.*
37. Jasmineae.	Ash, lilac.	*Tonic, secernant stimulant.*
38. Vitices.	Vervain.	*Deobstruent, secernant stimulant.*
39. Labiatae.	Sage, catnip.	*Secernant stimulant, stomachic, tonic*
40. Scrophulariae.	Foxglove.	*Narcotic, absorbent, deobstruent.*
41. Solaneae.	Red pepper, henbane.	*Narcotic, cathartic, warming stomachic.*
42. Boragineae.	Comfrey.	*Astringent, vulnerary, emollient.*
43. Convolvuli.	Jalap, dodder.	*Cathartic.*
44. Polemonia.	Lichnidia.	*Feeble tonic.*
45. Bignoniae.	Snake-head.	*Cathartic, narcotic.*
46. Gentianae.	Caroline pink.	*Cathartic, tonic.*
47. Apocyneae.	Milkweed.	*Cathartic, narcotic, deobstruent.*
48. Sapotae.	Sour sop.	*Cathartic, antispasmodic.*

CLASS V. *Corols surrounding the germ.*

49. Guaiacanae.	Lignum vitae.	*Tonic, warming stomachic.*
50. Rhododendra.	Laurel.	*Tonic, narcotic.*
51. Ericae.	Wintergreen.	*Tonic, astringent, refrigerant.*
52. Campanulaceae.	Lobelia.	*Cathartic, emetic, deobstruent.*

CLASS VI. *Corols on the germ—anthers united.*

53. Cichoraceae.	Lettuce, endive.	*Aperient, mild anodyne.*
54. Cinarocephalae.	Thistle, burdock.	*Tonic*, if nauseous *cathartic.*
55. Corymbiferae.	Boneset, fleabane.	*Tonic, secernant stimulant.*

CLASS VII. *Corols on the germ—anthers separate.*

56. Dipsaceae.	Button bush, teasel.	*Weak tonic.*
57. Rubiaceae.	Bedstraw, venus pride.	*Weak tonic, aperient.*
58. Caprifolia.	Elder, dogwood.	*Tonic, cathartic* if nauseous.

Section third. Flowers polypetalous.

CLASS VIII. *Stamens on the germ.*

59. Araliae.	Ginseng, spikenard.	*Tonic, expectorant.*
60. Umbelliferae.	Cicuta, fennel.	*Stomachic, narcotic* if nauseous.

CLASS IX. *Stamens below the germ.*

61. Ranunculaceae.	Crowfoot, gold thread.	*Narcotic, astringent.*
62. Papaveraceae.	Bloodroot, popy.	*Narcotic, anodyne.*
63. Cruciferae.	Radish, cabbage.	*Diuretic, emollient stomachic.*
64. Capparides.	Cleome, mignonette.	*Aperient, narcotic* if nauseous.
65. Sapindi.	Soap-berry.	*Emollient.*
66. Acera.	Maple tree.	*Aperient, diuretic.*
67. Malpighiae.	Barbadoes cherry.	*Aperient.*
68. Hyperica.	John's wort, sundew.	*Tonic, vulnerary.*
69. Guttiferae.	Misseltoe-rose.	*Expectorant, secernant stimulant.*
70. Aurantia.	Orange, lemon.	*Tonic, refrigerant.*
71. Meliae.	Tea.	*Astringent anodyne.*
72. Vites.	Grape.	*Astringent, refrigerant.*
73. Gerania.	Wood-sorrel, geranium.	*Tonic, refrigerant, narcotic* if nauseous.
74. Malvaceae.	Hollyhock.	*Emollient, aperient.*
75. Magnoliae.	White wood.	*Tonic, aperient.*
76. Annonae.	Custard apple.	*Tonic, aperient.*
77. Menisperma.	Moonseed.	*Feeble narcotic.*
78. Berberides.	Witch hazel.	*Astringent, refrigerant.*
79. Tiliaceae.	Basswood.	*Emollient, aperient.*
80. Cisti.	Rock-rose, violet.	*Tonic.*
81. Rutaceae.	Rue.	*Caustic, narcotic.*
82. Caryophylleae.	Pink, flax.	*Emollient, aperient.*

CLASS X. *Stamens surrounding the germ.*

Names.	*Examples.*	*Properties.*
83. Sempervivae.	Houseleek, live-forever.	*Emollient, vulnerary.*
84. Saxifragae.	Saxifrage, currant leaf.	*Tonic.*
85. Cacti.	Prickly pear, currant.	*Refrigerant, emollient, tonic.*
86. Portulacceae.	Purslane.	*Emollient, vulnerary.*
87. Ficoideae.	Ice plant.	*Emollient, refrigerant.*
88. Onagrae.	Scabish.	*Tonic, aperient.*
89. Myrti.	Mock orange.	*Tonic.*
90. Melastomae.	Deer grass.	*Feeble tonic.*
91. Salicariae.	Willow herb.	*Deobstruent, cathartic.*
92. Rosaceae.	Apple, rose, peach.	*Refrigerant, tonic, astringent.*
93. Leguminosae.	Cassia, pea, clover.	*Aperient, diuretic, emollient.*
94. Terebintaceae.	Sumach, butternut.	*Cathartic, emetic, narcotic.*
95. Rhamni.	Winter berry, jersey tea.	*Cathartic, tonic.*

Section fourth. Diclinious or anomalous.

CLASS XI. *Flowers mostly apetalous.*

96. Euphorbeae.	Castor bean.	*Cathartic*, mild *emetic.*
97 Cucurbitaceae.	Cucumber, melon.	*Cathartic, refrigerant.*
98. Urticeae.	Hop, hemp, fig.	*Tonic, anodyne.*
99. Amentaceae.	Oak, willow, elm.	*Astringent, tonic, emollient.*
100. Coniferae.	Pine tree, cedar.	*Expectorant, secernant stimulant.*

ABBREVIATIONS, CHARACTERS, &c.

Time of Flowering.

Ap. April—M. May—J. June—Ju. July—Au. August—S. September—Oc. October.

Duration of Plants.

☺ annual—♂ biennial—♃ perennial—♄ woody.

Colour of Corols.

r. red—p. purple—y. yellow—w. white—b. blue—g. green.

Abbreviations for Author's Names,
adjoining the specific name.

A. Aiton—B. Barton—Bk. Beck—Bl. Bridel—Bw. Bigelow—Br. Robert Brown—C. Curtis—D. Desfontaines—Dc. De Candolle—Dn. Darlington—E. Elliott—Ea. Eaton—Ehr. Ehrhart—G. Gronovius—H. Hedwig—Hn. Hoffman—Hr. L'Heritier—J. James—Ju. Jussieu—Jn. Jacquin—L. Linneus—Lb. Lambert—Lk. Lamarck—M. Muhlenberg—Mx. Michaux—Mn. Moenchausen—Mr. Murray—N. Nuttall—P. Persoon—Ph. Pursh—Pt. Poiret—Pb. Palisot de Beauvois—R. Rafinesque—Rs. Roemer and Shultes—Rd. Richard—S. Smith—Sy. Salisbury—Sr. Screber—Sl. Sprengel—Sw. Swartz—Sh. Schkuhr—Sz. Schwinitz—Sp. Sibthorp—T. Torrey—Tt. Tournefort—Tr. Turton—V. Ventenant—W. Wildenow—Wr. Walter—Wm. Wangenheim.

NORTH AMERICAN PLANTS.

GENERA.

CLASS I. MONANDRIA.

Order I. Monogynia.

Salicornia. Calyx inflated, entire, 3 or 4-sided, obconic : corol o : style 2-cleft : seed 1, enclosed in the calyx. 12. 29—(samphire.) *S.*

Hippuris. Calyx superior, obsolete, with a 2-lobed margin : corol o : seed 1 : stigma simple : style in a groove of the anther. 15. 88—(marestail.)

Southern.

Canna. Calyx double ; outer one short, 3-cleft, permanent ; inner one (or corol) 6-parted ; one of the divisions reflexed : anther simple, attached to the margin of the filament, which is petal-like and 2-lobed : style thick, club-form ; stigma obtuse : capsule muricate, 3-celled : seeds numerous and globose. 8. 20—(flowering reed.)

Thalia. Calyx double ; outer one small, 3-leaved ; inner one (or petal) 5-parted : anther simple, ovate, inserted into a depressed filament : style short, bent from the anther : stigma perforated, ringent : capsule 2-celled, (in some species a 1-celled nut.) 8. 20—(long stems.)

* Scirpus, Cyperus.

Order II. Digynia.

Callitriche. Calyx inferior, 2-leaved : capsule 2-celled, membranaceous and margined : seeds 4, naked, compressed : (flowers sometimes monœcious, and by some the calyx is called the corol.) 12. 88—water-starwort.) *S.*

Blitum. Calyx 3-cleft, or 3-parted, berry-like : corol o : seed 1, immersed in the calyx. 12. 29—(blite.)

Southern.

Corispermum. Calyx 2-parted : corol o : seed 1, naked, plano-convex, oval, having an acute, circular margin. 12. 29—(tickseed.) *S.*

* Uniola, Saccharum.

CLASS II. DIANDRIA.

Order I. Monogynia.

A. *Corol 1-petalled, inferior, regular : seeds in a drupe or nut.*

Ligustrum. Calyx 4-toothed : corol with 4 ovate divisions : berry 1 or 2-celled, 2 to 4-seeded. 44. 37—(prim.)

Chionanthus. Calyx 4-parted : corol 4-parted, with very long divisions : nucleus of the drupe striate-fibrous. 44. 37—(fringe tree.) *S.*

Ornus. Calyx 4-parted : corol 4-parted ; divisions long, ligulate : stamens with two barren filaments : fruit with a winged nut. 44. 37—(flowering ash.)

Exotics.

JASMINUM. Corol salver-form, 5 to 8-cleft: berry 2-seeded, each seed solitary, arilled. 44. 37—(jasmine.)

SYRINGA. Corol salver-form: capsule 2-celled. 44. 37—(lilac.)

Southern.

OLEA. Calyx small, 4-toothed: corol with a short tube, 4-cleft, segments ovate: drupe 1-seeded, often with an abortive rudiment. 44. 37—(american olive.)

ELYTRARIA. Calyx 4-parted, with the front segment cleft: corol 5-cleft, segments nearly equal: stamens with 2 barren filaments: capsule 2-celled, 2-valved; each valve having half the partition attached to it. 40. 36.

B. *Corol* 1-*petalled*, *inferior*, *irregular*; *seeds in capsules.*

VERONICA. Calyx 4-parted: corol cleft into 4 lobes, lower division smaller: capsule obcordate, few-seeded, 2-celled. 40. 35—(speedwell.) *S.*

LEPTANDRA.* Calyx 5-parted, acuminate: corol tubular, 4-cleft, with one division smaller: capsule ovate, 2-celled, opening at the top. 40. 35—(culver's physic.) *S.*

GRATIOLA. Calyx 5-parted or 5-leaved, sometimes with a 2-leaved calycle: corol 2 lipped, reversed, tubular, upper lip 2-lobed, under one equally 3-cleft: stamens 4, (2 of them barren:) stigma 2-lipped: capsule 2-celled. 40. 40—(hedge-hyssop.) *S.*

LINDERNIA. Calyx 5-parted, equal: corol reversed, tubular, ringent, the upper lip very short, the lower one unequally 3-cleft, 2-keeled at the base: anthers cohering by pairs, 2 stamens longer, forked, barren: capsule 2-celled, 2-valved, the partition parallel to the valves. 40. 40. *S.*

PINGUICULA. Calyx 2-lipped, upper lip 3-cleft, lower one 2-cleft: corol ringent, with a spur at the base; limb 2-lipped, upper lip 3-lobed, lower one 2; throat contracted: stamens and style short: stigma 2-lipped, covering the anther: capsule 1-celled, many seeded, receptacle of the seed central, unconnected. 24. 40—(butterwort.) *S.*

HEMIANTHUS. Calyx tubular, border 4-toothed, cleft on the under side: corol with the upper lip obsolete, lower one 3-parted, with the middle segment linear, or strap-like and truncate, long, closely incurved: stamens with 2-cleft filaments, bearing the anthers on the lateral branches: capsules 1-celled, 2-valved, many-seeded: seeds ovate, shining. 40. 40.

CATALPA. Corol 4 or 5-cleft, somewhat inflated, bell-form: calyx 2-parted or 2-leaved: stigma 2-lipped: capsule cylindric, 2-celled. 40. 45—(catalpa tree.) *S.*

JUSTICIA. Calyx simple or double, 5-parted: corol ringent, or nearly equal, upper lip emarginate, lower one 3-cleft: anthers 1 or 2 on each filament: capsule 2-celled, bursting with an elastic claw: partitions transverse. 40. 36—(malabar nut.) *S.*

UTRICULARIA. Calyx 2-leaved or 2-parted, equal: corol ringent, with a sub-cordate palate, the upper lip bearing the stamens, the lower lip spurred: stigma 2-lipped: capsule 1-celled, globular. 24. 40—(bladder-wort.) *S.*

Southern.

MICRANTHEMUM. Calyx 4-parted: corol 4-parted, and somewhat 2-lipped, with the upper one smaller than the rest: filaments incurved, shorter than the corol: capsule sub-globular, 1-celled, 2-valved, with many striate seeds. 20. 34.

C. *Corol* 1-*petalled*, *inferior*, *irregular*; *seeds naked.*

LYCOPUS. Calyx tubular, 5-cleft or 5-toothed: corol tubular, 4-cleft, nearly equal, 1 division broader and emarginate: stamens distant: seeds 4, retuse. 42. 39—(water horehound.) *S.*

MONARDA. Calyx cylindric, striated, 5-toothed: corol ringent, tubular, upper lip lance-linear, involving the filaments, lower lip reflexed, 3-lobed. 42. 39—(Oswego tea, mountain-mint.) *S.*

Salvia. Calyx tubular, striated, 2-lipped, under lip 2 to 3-toothed, lower lip 2-cleft: corol ringent: filaments transversely or laterally affixed to a pedicel. 42. 39—(sage.) *S.*

Collinsonia. Calyx tubular, 2-lipped, upper lip 3-toothed: corol funnel-form, unequal, under lip many-cleft, capillary: one perfect seed. 42. 39—(horse-balm.) *S.*

Exotic.

Rosmarinus. Corol ringent, upper lip 2-parted: filaments long, curved, simple, with a tooth. 42. 39—(rosemary.)

D. *Corol superior.*

Circaea. Calyx 2-leaved or 2-parted: corol 2-petalled: capsule hispid, 2-celled, not gaping; cells 1 or 2-seeded. 48. 88—(enchanter's nightshade.) *S.*

* Salicornia, Cunila, Schoenus, Scirpus, Verbena, Hedeoma, Lemna, Crypta.

Order II. Digynia.

Anthoxanthum. Calyx glume 2-valved, 1-flowered: corol glume 2-valved, acuminate, awned nearer the base. 4. 10—(sweet vernal grass.) *S.*

Crypta. Peplis. Calyx 2-leaved, inferior: corol 2 or 3-petalled, closed: styles none: stigmas 2 or 3, very minute: capsule 2 or 3-celled, 2 or 3-valved: cells 4 or 5-seeded; seeds sub-cylindric, striate, incurved. 13. 86—(mud-purslane.) The corol appears like a capsule with an aperture at the top, when examined without a lens.

Southern.

Erianthus. Calyx 2-valved, valves nearly equal, villose at the base: corol 2-valved, unequal, inner glume bearing a long awn near its summit. 4. 10.

* Holcus, Festuca, Saccharum.

CLASS III. TRIANDRIA.

Order 1. Monogynia.

A. *Flowers superior.*

Fedia. Calyx 3 to 6-toothed, permanent: corol tubular, 5-cleft or 5-parted: nut or capsule, 2 or 3-celled: seed naked, or crowned with a tooth. 48. 56—(lamb lettuce.) *S.*

Iris. Calyx spathe 2 or 3-valved: corol 6-parted, divisions alternately reflexed: stigmas 3, petal-like: style short: capsule 3-celled. 6. 18—(flower-de-luce, iris or flag.) *S.*

Dilatris. Lachnanthes. Perianth petal-like, hirsute outside, permanent, deeply divided into 6 nearly equal parts: the third filament less than the rest: stigma minutely 3-lobed, style declining: capsule globose, 3-celled. 6. 18.

Exotic.

Valeriana. Calyx 0, or with an extremely small margin: corol funnel-form, 5-cleft, base gibbous: seed 1: stamens 1, 2, 3 and 4, exsert. 48. 56—(valerian.)

Crocus. Spathe radical: corol funnel-form, with a long slender tube: stigma deep-gashed, crested. 6. 18—(saffron.)

Southern.

Phyllactis. Involucre 1-leaved, sheathing: calyx marginal, minute: corol 3-cleft: seed 1: styles and stamens exsert. 48. 56.

Tripterella. Calyx (or corol) tubular, prismatic, with winged margins; base ventricose; limb 6-cleft, internal teeth covering the stamens: corol none: stigmas 3, capitate: capsule 3-sided, 3-celled, many-seeded: stamens included within the tube of the calyx. 40. 45.

Boerhaavia. Calyx tubular; margin entire: corol 1-petalled, bell-form,

plaited: seed 1, invested by the permanent calyx, naked or tubercled, 5-grooved, obconic: stamens various in number, as 1, 2, 3, 4, 10. 54. 32.

Calymenia. Allionia? Involucre perianth-like, 5-parted, permanent, 1 to 5-flowered: perianth none: corol sub-campanulate, plaited, 5-parted; laminae emarginate; tube permanent: stamens exsert: seed 1, covered with a coriaceous membrane, obconic, 5-furrowed. 48 56.

Ixia. Spathe 2 or 3-valved, ovate, short: corol 6-parted or 6-petalled: sometimes tubular: stamens strait or incurved: stigmas sub-filiform. 6. 18.

B. *Flowers inferior.*

Commelina. Spathe cordate; perianth 3-leaved: corol 3-petalled subequal: 3 barren filaments—sometimes the whole 6 filaments bear anthers: stigma simple: nectaries 3, cross-form, inserted on peculiar filaments: capsule sub-globose, 3-celled, cells 2-seeded or empty. 6. 13—(day flower.) S.

Xyris. Calyx a cartilaginous glume, 2 or 3-valved, in a head: corol 3-petalled, equal, crenate: capsule 3-valved, many-seeded. 6. 13—(yellow-eyed-grass.) *S.*

Schollera. Leptanthus. Spathe 1-flowered: corol long-tubular; border 6-parted, with the stamens on the divisions; filaments equal. 6. 17.

Heteranthera. Calyx a 2 or 3-flowered spathe: corol dull-coloured, membranaceous, with a long slender tube, border 4 to 6-parted: anthers 3, 2 of them attached to the divisions of the corol, the other attached to the top of the style, and much longer: stigma sub-capitate, 1-sided: capsule 3-celled, many-seeded, dehiscent at the angles. This genus is intermediate between the class Triandria, and the class Gynandria. 6. 17.

Southern.

Stena. Calyx deeply 3-parted (or 3-leaved) acute, permanent: petals 3, roundish: anthers oblong: stigma 3-cleft: capsule rendered acuminate by the permanent style, 1-celled, 3-valved. 5. 13.

Stipulicidia. Calyx 5-parted, permanent: corol 5-petalled, entire, as long as the calyx: style short, stigmas 3: capsule 1-celled, 3-valved: seeds few, attached by filaments to the receptacle. 22. 82.

Polychnemum. Calyx 3-leaved: petals calyx-like: capsule 1-seeded, membranaceous, not opening, covered by the calyx. Stamens vary from 1 to 5. 12. 29.

C. *Flowers with glumes.*

Kyllingia. Spike (or ament) roundish-oblong, imbricate, sessile, or umbel like: calyx of 2 unequal leaves, or valves, 1-flowered: corol 2-valved, longer than the calyx. 3. 9—(bog-rush.) *S.*

Scripus.* Glume 1-valved, 1-flowered, chaffy, scales imbricated every way: styles filiform, caducous: corol 0: seed single, naked, or surrounded with hairs or bristles. 3. 9—(club-rush.) *S.*

Schoenus. Spikelets sub-convolute, acute; scales or glumes heaped in fascicles, outer ones dry, shining, empty: corol 0: seed 1, roundish, naked; style caducous. 3. 9—(bog-rush.) *S.*

Rhyncospora. Scales or glumes of the calyx fascicled into a spike, lower ones empty: corol 0: styles permanent at the base. bristles surrounding the base of the seed. 3. 9—(false bog-rush.) *S.*

Mariscus. Flowers distinct, sub-imbricate in a few-flowered spike: calyx 2-valved, 3-flowered: corols 1-valved, the lower corols embracing the upper: style 3-cleft. 3. 9—(hedgehog-rush.) *S.*

Dulichium. Spikes sub-racemed, proceeding from the axils of the leaves: spikelets linear-lanceolate, sub-compressed: scales or glumes somewhat 2-ranked, closely embracing: styles very long, 2-cleft: germ with small bristles rough backwards. 3. 9—(galingale.) *S.*

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* Trichophorum is united to this genus.

Cyperus. Corol 0: calyx scales imbricated 2-ways: seed single, beardless: spikelets compressed, distinct. 3. 9. *S.*

Eriophorum. Glume chaffy, 1-valved, imbricated every way into a spike: corol 0: seed beset round with very long dense woolly hairs. 3. 9—(cotton-grass.) *S.*

Fuirena. Scales of the calyx mucronate or awned, every where imbricate in a spike: corol 0: seed beset round with broad chaff-like scales, sometimes awned. These scales are called valves of a corol by some. 3. 9—(umbrella-grass.) *S.*

Cenchrus. Involucre laciniate, echinate, 3 or 4-flowered: glumes 2-valved, 2-flowered, one flower barren: corol 2-valved, awnless: style 2-cleft. 4. 10—(hedge-hog-grass.) *S.*

Limnetis. Spartina. Calyx 2-valved, compressed, one of them keeled and longer than the other: corol 2-valved, awnless, unequal: flowers in unilateral spikes, somewhat imbricated in 2 rows. 3. 9—(salt-grass.) *S.*

Oryzopsis. Calyx 2-valved, lax, obovate: corol coriaceous, cylindric-ovate, surrounded with hairs at the base; valves 2, outer one awned at the tip: seed with 2 linear appendages, or one 2-parted: styles united in one, with 2 diverging or reflexed stigmas. 4. 10—(mountain rice.)

Southern.

Mapania. Flowers in heads, involucre 3-leaved: perianth none: corol glumaceous, 6-valved, toothed, imbricate: stigmas 3: seeds enveloped in a 6-parted glume. 3. 9.

Dichroma. Flowers in a spike-form head with an involucre: scales imbricated on all sides, lower ones empty: corol none: style brittle-form, 2-cleft: seeds without bristles, sub-lenticular, sub-rugose, terminated by the 3-sided base of the style. 3. 9.

Fimbristylis. Scales of the calyx imbricated on all sides into a spike: corol none: style ciliate, caducous, bulbous at the base. 3. 9.

Vaginaria. Spike ovate, calyx-like scales imbricated on all sides, acuminate: corol none: stigmas 3: seed surrounded at the base with three scales and three bristles. 3. 9.

Nardus. Calyx 1-flowered, 1-valved: corol 1-valved, included in the calyx: stigma 1. Flowers spiked, alternating and sessile. 4. 10—(mat-grass.)

Miegia. Arundinaria. Flowers polygamous, panicled: calyx 2-valved, many-flowered, short and unequal: corol 2-valved, unequal, the larger one acuminate: style very short, 3-cleft, plumose: nectary 3-parted, divisions lanceolate, acute, as long as the germ: seed naked, large, acuminate. 4. 10—(cane.)

Eriocoma. Calyx 2-valved, 1-flowered; valves gibbous, compacted above, longer than the corol, 3 nerved, cuspidate: corol 2-valved, roundish, coriaceous, invested with wool; the outer valve terminated by a short 3-sided caducous awn: anthers bearded: seed sub-spherical, large. 4. 9—(silk-grass.)

Dichromena. Spike in a head, involucred; scales imbricated on all sides into crowded sessile spikelets, with the lower scales empty: corol none: style bristle-form, 2-cleft: seed without bristles, sub-lenticular, sub-rugose, terminated by the triangular permanent style. 4. 9.

* Juncus, Galium, Oryzopsis, Queria.

Order II. Digynia.

A. *Spikelets 1-flowered: corols without abortive rudiments of flowers at the base.*

(Calyx and corol different in texture.)

Leersia. Calyx 0: corol 2-valved, closed: valves compressed, boat-form, awnless: nectary obovate, entire; stamens 1 to 6. 4. 10—(cut-grass.) *S.*

Paspalum. Ceresia. Calyx in 2 membranaceous, equal, roundish, valves: corol awnless, cartilaginous, of the form of the calyx: stigma plumose, coloured: nectary lateral: flowers in unilateral spikes. 4. 10. *S.*

MILIUM. Calyx 2-valved, herbaceous, ventricose: corol 2-valved, awnless, coriaceous, oblong, concave, shorter than the calyx: seed 2-horned: nectary lateral: stigmas villose. 4. 10—(millet.) *S.*

PIPTATHERUM. Calyx membranaceous, longer than the corol: corol cartilaginous, oval; lower valve awned at the tip; nectary ovate, entire: seed coated. 4. 10.

STIPA. Calyx 2-valved, membranaceous: corol 2-valved, shorter than the calyx, coriaceous, sub-cylindric; valves involute, truncate; awn terminal, very long, caducous, twisted at the base: seed coated. 4. 10—(feather-grass.) *S.*

ARISTIDA. Calyx 2-valved, membranaceous, unequal: corol 2-valved, pedicelled, sub-cylindric: lower valve coriaceous, involute, 3-awned at the tip; upper valve very minute or obsolete: nectary lateral. 4. 10—(beard-grass.) *S.*

Exotic.

SACCHARUM. Calyx involucred with long wool at the base, 2-valved: corol 1 or 2-valved: stamens 1 to 3. 4. 10—(sugar cane.)

(Calyx and corol of similar texture—flowers in spreading panicles.)

MUHLENBERGIA. Calyx 1 or 2-valved, very minute, truncate, unequal: corol 2-valved, base hairy, outer valve awned at the tip: seed 1, oblong, acuminate: 4. 10—(dropseed-grass.) *S.*

TRICHODIUM. Calyx 2-valved, valves nearly equal, acute; keel with small spines: corol 1-valved, awnless, shorter than calyx: stigmas nearly sessile, sub-hispid. 4. 10—(thin-grass.) *S.*

AGROSTIS. Calyx herbaceous, 2-valved, 1-flowered, valves acute, a little less than the corol: corol 2-valved, membranaceous, often hairy at the base: stigmas longitudinally hispid or plumose, florets spreading: nectary lateral: seed coated. 4. 10—(redtop.) *S.*

CINNA. Calyx 2-valved, compressed, nearly equal: corol linear, compressed, short-stiped, naked at the base; lower valve inclosing the upper, short-awned near the tip. 4. 10.

POLYPOGON. Calyx 2-valved, 1-flowered; valves nearly equal, terminating in a bristle: corol 2-valved, shorter than the calyx; the lower valve terminating in a bristle. 4. 10.

TRICHOCHLOA. Calyx 2-valved, 1-flowered; glumes very minute: corol much larger than the calyx, 2-valved, naked at the base; lower valve convolute at the base, terminating in a long awn, not articulated. 4. 10.

ARUNDO. Calyx 2-valved, unequal, membranaceous, surrounded with hair at the base; lower valve mucronate or slightly awned. Sometimes there is a pencil-form rudiment at the base of the upper valve. 4. 10—(reed.)

(Calyx and corol of similar texture—flowers in compact panicles, often spike-form.)

PSAMMA. Calyx 2-valved, awnless: corol shorter than the calyx, surrounded with hairs at the base: nectary lance-linear, longer than the seed: style 3-parted. 4. 10.

CRYPSIS. Calyx 2-valved, oblong, keeled, membranaceous: corol 2-valved, longer than the calyx, which it resembles in texture and form; nectary none: stamens sometimes but 2. 4. 10.

ALOPECURUS. Calyx 2-valved, equal; glume generally connate at the base: corol 1 valved, utricle-like, cleft on one side, awned below the middle. 4. 10—(foxtail-grass.) *S.*

PHLEUM. Calyx hard, 2-valved, equal, sessile, linear, truncate, bicuspidate: corol enclosed in the calyx, 2-valved, awnless, truncate. 4. 10—(timothy-grass.) *S.*

Southern.

CERESIA. Flowers lateral, 2-rowed, under a wide membranaceous boat-form rachis: calyx 2-valved. 4. 10.

CALAMAGROTIS. Calyx 2-valved, 1-flowered, valves acute or acuminate: corol 2-valved, mostly shorter than the calyx, surrounded with long wool at the base. 4. 10.

B. *Spikelets 1-flowered; corol with 1 or 2 abortive rudiments of flowers at the base.*

(Calyx and corol of different texture.)

CYNODON. Calyx 2-valved, lanceolate, spreading: corol 2-valved, longer than the calyx; the outer valve larger, and somewhat oval, and surrounding the inner one: rudiment minute, pedicelled: nectary truncate: spikes digitate and fascicled: flowers solitary. 4. 10—(dwarf finger-grass.)

GYMNOPOGON. ANTHOPOGON. Calyx 2-valved, keeled, nearly equal, longer than the corol: valves of the corol nearly equal; a straight bristle a little below the tip of the lower one: rudiment awn-form. 4. 10.

Southern.

AULAXANTHUS. AULAXIA. Calyx 2-valved, 1-flowered, with the rudiment of a second; valves equal, furrowed, the furrows villous: corol with 2 nearly equal valves. 4. 10.

(Calyx and corol of similar texture.)

PHALARIS. Calyx membranaceous, 2-valved, valves keeled, nerved, equal in length, including the 2-valved pilose corol. The corol is shorter than the calyx and coriaceous: rudiments opposite, sessile, resembling valves: nectary lateral. 4. 10—(ribbon-grass, canary-grass.) *S.*

BRACHYELYTRUM. MUHLENBERGIA. Calyx very minute; lower glume scarcely perceptible: corol with the lower valve terminated by a long bristle; upper one with a club-form rudiment at the base. 4. 10.

Southern.

BRUCHMANNIA. Calyx 2-valved, 1 or 2-flowered, valves somewhat obcordate, inflated, equal: corol 2-valved, included in the calyx, valves unequal, the dorsal valve acuminate-awned; one flower often abortive. 4. 10.

ORTHOPOGON. Calyx 1-flowered; valves 3, awned, nearly equal; awns straight, smooth, that of the outer valve longest. 4. 10.

C. *Spikelets many-flowered.*

(Flowers in panicles; corol unarmed.)

PHRAGMITES. Calyx 5—7-flowered: the florets on villose pedicels, excepting that the lowest is sessile, and naked at the base; lower valve elongated, acuminate, involute; upper one somewhat conduplicate. 4—10.

GLYCERIA. Spikelets terete, elongated: calyx many-flowered, shorter than the florets: lower valve of the corol membranaceous and somewhat herbaceous; upper one somewhat conduplicate: nectary lateral, connate: stigma decompound. 4. 10.

UNIOLA. Spikelets many-flowered, flat, 2-edged, ovate: calyx 3 to 5-glumed: corol 2-valved, awnless, inner one smallest, concave on the back; outer one boat-form. stamens 1 to 3: appendages 2, somewhat 2-horned or emarginate. 4. 10—(sea rush-grass.) *S.*

BRIZA. Spikelets heart-ovate, many-flowered: calyx chaffy, shorter than the 2-ranked florets: corol ventricose: lower valve cordate, upper one orbicular, short. 4. 10—(quake-grass.) *S.*

POA. Spikelets oblong or linear, compressed, many-flowered: calyx shorter than the florets: corol herbaceous, awnless, often arachnoid at the base; lower valve scarious at the margin. 4. 10—(spear-grass.) *S.*

Exotic.

SORGHUM. Florets in pairs, one perfect, with a 3-valved corol, and sessile: the other staminate or neutral, and pedicelled. 4. 10—(broom-corn.)

(Flowers in panicles; corol armed or mucronate.)

(Seeds free.)

KOELERIA. Calyx 2—4-flowered, shorter than the florets: lower valve of the corol mucronate, or with a short bristle a little below the tip. 4. 10.

URALEPSIS. Calyx scariose, 2-valved, 2 or 3-flowered: corol 2-valved, stiped; outer valve with hairy nerves, much longer than the calyx, and tricuspidate, with the middle cusp longest, and terminated with an awn; inner valve short and arched: seed arilled: florets alternate and distinct, both flowers and culm purple. 4. 10—(purple hair-grass.)

WINDSORIA. TRICUSPIS. Calyx 2-valved, keeled, 1-nerved, scariose, acute or cuspidate: corols 2-valved; outer valves having nerves with mucronate points, teeth between the points, and ciliate below; inner valves mostly naked, emarginate: flowers closely imbricated 2-ways in a thick spike. 4. 10.

(Seeds adnate.)

FESTUCA. Calyx 2-valved, many-flowered; spikelets compressed-teretish, or diverging when mature, awnless, or furnished with a terminal awn: corol somewhat terete; upper valve acute, mucronate, or with a short bristle at the tip: seed growing to the corol. 4. 10—(fescue-grass.) *S.*

CERATOCHLOA. Spikelets lanceolate, somewhat 2-edged, many-flowered: calyx shorter than the imbricate florets: lower valve of the corol compressed, mucronate below the tip; upper valve somewhat conduplicate; styles 2—3-parted. 4. 10.

DIARRHENA. Calyx 2-valved, very unequal, 2 to 5-flowered, rigid; glumes acuminate-mucronate: corol cartilaginous; inferior valve entire, broad; superior one very short, emarginate: seed coated, in length equal with the superior valve of the corol: nectary ovate, ciliate. 4. 10.

DACTYLIS. Spikelets aggregated in unilateral heads, many-flowered: calyx shorter than the florets, with one large glume, keeled, pointed: corol with the lower valve keeled, emarginate, mucronate; upper valve sub-conduplicate. 4. 10—(orchard-grass.) *S.*

(Flowers in panicles; corol more or less 2-cleft, and the lower valve awned on the back or a little below the tip.)

DANTHONIA. Calyx 2 to 5-flowered, longer than the florets; glumes cuspidate: corol bearded at the base; lower valve 2-toothed, with a twisted awn between the teeth; upper valve obtuse, entire. 4. 10—(wild oats.)

TRISETUM. Calyx 3 to 5-flowered, membranaceous, as long as the florets: lower valve of the corol with 2 bristle-form teeth at the tip and an awn below the teeth. 4. 10.

BROMUS. Calyx shorter than florets, 2-valved; spikelets terete-2-ranked, many-flowered: corol, outer valves bifid, awned below the tip; inner valve pectinate-ciliate, sub-conduplicate. 4. 10—(chess, broom-grass.) *S.*

ARRHENANTHERUM. Calyx membranaceous, 2-flowered, rather shorter than the florets; lower floret bearing anthers; lower valve 2-cleft, awned below the middle: upper floret perfect; lower valve cleft, unarmed, or with a short awn below the tip. 4. 10.

AVENA. Calyx 2-valved; 2, 3, or many-flowered: corol, valves mostly bearded at the base, lower one torn, with a twisted awn on the back: glumes membranaceous, and somewhat follicle-like: seed coated. 4. 10—(oats.) *S.*

AIRA. Calyx longer than the florets, glossy, 2-valved, 2 or 3-flowered: corol 2-valved; lower valve gnawed or toothed, awned on the back below the middle. 4. 10—(hair-grass.) *S.*

D. *Flowers in spikes.*

LOLIUM. Calyx 1-leafed, permanent, many flowered: florets in many-flowered 2-rowed simple sessile spikelets on a rachis: lower valve of the corol herbaceous-membranaceous, mucronate, or bristled at the tip. 4. 10—(darnel-grass.)

ELEUSINE. Calyx awnless, keeled, 5 to 9-nerved, membranaceous, 4 to 6-flowered; glumes obtuse, unequal: inflorescence an unilateral digitate spike. corol 2-valved, awnless, membranaceous, unequal; lower valve keeled, upper one concave on the back: seed triangular, transversely rugose. 4. 10—(dog-tail-grass.) *S.*

TRITICUM. Calyx 2-valved, about 3-flowered; florets sessile on the teeth of the rachis, obtusish and pointed: glumes beardless, or interruptedly bearded. 4. 10—(wheat.)

AGROPYRON. Spikelets sessile on the teeth of the rachis, 3 to 9-flowered: glumes lanceolate, keeled: corol with the lower valve mucronate, or ending in a subulate bristle. 4. 10.

SECALE. Calyx 2-valved, 2 or 3-flowered: spikeletssessile on the teeth of the rachis, with the terminal floret abortive: calyx 2-valved; glumes subulate, opposite, shorter than the florets: corol with the lower valve long-awned. 4. 10—(rye.)

ELYMUS. General calyx involucre-like, with its glumes in pairs, subulate: corol with its lower valve entire, mucronate, or with a short bristle at the tip: spikelets 2 or more at each joint of the rachis: 3 to 9-flowered. 4. 10—(lime-grass, wild rye.) *S.*

MELICA. Calyx 2 valved, unequal, coloured, obtuse, 2 to 4-flowered, and as long as the florets; one or more of the upper florets abortive and incomplete: corol unarmed, membranaceous: nectary connate: seed free. 4. 10—(melic-grass.) *S.*

ATHEROPOGON. Spikes in unilateral racemes: calyx 2-valved, membranaceous, 2-flowered; inferior valve bristle-form: perfect floret 2-valved; inferior valve 3-toothed, or 3-bristled; superior valve bifid: abortive floret pedicelled, 2-valved, 3-bristled. 4. 10—(hairy beard.)

Southern.

SESLERIA. Calyx 2 to 5-flowered: corol 2-valved, toothed at the tip: stigmas sub-glandular: flowers often purplish; base of the spike bracted or involucred. 4. 10—(moor-grass.)

OXYDENIA. Spike panicled, filiform; spikelets 3 or 4-flowered, alternating on a one-sided rachis: general calyx permanent, 2-valved, acuminate-subulate, 1-nerved, longer than the florets; corol 2-valved, small, caducous, obtuse, with or without awns: seed roundish, naked, smooth, somewhat gibbous. 4. 10.

CHLORIS. ATHEROPOGON. Spikes digitate, one-sided: calyx 2-valved, 2 to 4-flowered; valves keeled. Flowers dissimilar, and the abortive florets pedicelled. 4. 10.

AEGILOPS. Calyx lateral, 2-valved, mostly 3-flowered; valves coriaceous, broad, with many rigid diverging awns: corol 2-valved, outer valve 2 or 3-awned: spikes with the intermediate ones barren, lateral ones perfect, sessile. 4. 10.

E. *Flowers polygamous.*

(In panicles.)

PANICUM. Calyx 2-valved, 2-flowered: the lower glume generally very small: the lower floret abortive, 1 or 2-valved; the lower valve resembling the calyx, the upper one membranaceous: perfect floret with cartilaginous valves, unarmed. 4. 10—(cockfoot grass, panic-grass.) *S.*

HIEROCHLOA. Calyx 2-valved, 3-flowered, with scarious glumes: lateral florets staminate, central ones perfect and diandrous, rarely triandrous. 4. 10.

HOLCUS. Calyx 2-flowered; with membranaceous, boat-form, mucronate glumes: panicle compact; lower florets perfect, sessile, unarmed; upper ones staminate or neutral, pedicelled, awned near the middle of the back. 4. 10—(sweet seneca, or soft-grass.)

(In spikes.)

PENNISETUM. SETARIA. Calyx 2 valved, 2-flowered; glumes unequal, herbaceous; sometimes with a second staminate or neutral floret: 1 or 2-valved.

herbaceous: inflorescence a spike, with a 2 or many-bristled involucre. 4. 10—(bristled panic.)

Digitaria. Calyx 1 or 2-valved, 2-flowered; the outer valve very small or none; the inmost one of the length of the corol: corol 2-valved, oblong-ovate, awnless: style very long; spikes digitate, unilateral, linear: spikelets on short bifid pedicels, in pairs, lower floret abortive, 1-valved, herbaceous; upper floret perfect, with coriaceous valves. 4. 10—(finger-grass.) *S.*

Andropogon. Spikelets in pairs, involucred; the lower one staminate or neutral on a bearded pedicel: calyx and corol often very minute or wanting: upper spikelet sessile, 1-flowered, perfect; glumes sub-coriaceous; corol 2-valved, shorter than the calyx, membranaceous, lower valve generally awned. 4. 10—(beard-grass.) *S.*

Hordeum. Spikelets 3 at each joint of the rachis, 1 or 2-flowered, all perfect, or the lateral ones abortive: glume lateral, subulate: perfect flower with a 2-valved corol; lower valve ending in a bristle: seed coated. 4. 10—(barley.)

Southern.

Monocera. Flowers in 2 rows on one side of the rachis: calyx 3-valved, many-flowered; valves awned below the tip. Perfect flowers have the corol 2-valved, unequal; the outer valve awned below the tip. Neutral flowers have corols with 2 awnless valves. 4. 10.

Manisuris. Perfect flowers mixed with the staminate, the calyx 1-flowered, valves 2, unequal; outer one coriaceous, roundish, emarginate on each side of the base: corol 2-valved, smaller, and included in the calyx. Staminate and neutral have the calyx uniform or regular. 4. 10.

Lepturus. Rotboellia. Rachis articulated, filiform; articulations single-flowered: calyx growing to the rachis, 1 or 2-valved; valves simple or 2-parted. 4. 10.

Rotboellia. Rachis fragile, articulated, cylindric, often filiform; articulations 2-flowered or more: calyx lance-ovate, flat, 1 or 2-valved: corol smaller, 2-valved. 4. 10.

Pleuraphis. Central spikelet perfect; calyx 1-flowered, with wedge-obovate, 2-cleft, 5-bristled glumes: lateral spikelets staminate; calyx 2-flowered, with one valve bristled near the base. 4. 10.

* Stellaria, Anthoxanthum.

Order III. Trigynia.

Holosteum. Calyx 5-leaved, coloured within: corol with five 2-parted petals: capsule 1-celled, bursting at the summit. 22. 82.

Mollugo. Calyx 5-leaved, inferior, coloured inside: corol 0: capsule 3-celled, 3-valved, many-seeded. 22. 82—(carpet weed.) *S.*

Lechea. Calyx 3-leaved: petals 3, linear: stigmas 3, plumose; capsule 3-celled, 3-valved, with 3 inner valvelets: seed 1. 22. 82—(pin-weed.) *S.*

Proserpinaca. Calyx 3-parted, superior, permanent; corol 0: nut bony, 3-sided, 3-celled, crowned by the calyx. 15. 22—(mermaid weed.) *S.*

Southern.

Polycarpon. Calyx 5-leaved: petals 5, very short, emarginate, permanent: capsule ovate, 1 celled, 3-valved. 22. 82.

* Zanthoxylon, Stellaria, Eriocaulon, Queria or Anychia.

CLASS IV. TETRANDRIA.

Order I. Monogynia.

A. *Flowers superior.*

(1-petalled.)

Cephalanthus. Inflorescence in a head: general calyx none; proper calyx superior, minute, angular, 4-cleft: corol funnel-form: receptacle globular, hairy: capsules 2 to 4-partible: seed solitary, oblong. 48. 58—(button-bush.) *S.*

Dipsacus. Common calyx involucre-like, many-leaved; proper calyx 1-leaved, superior: receptacle chaffy: corol tubular, 4-cleft: seed 1, crowned with a wineglass-form egret: inflorescence an ovate head. 48. 56—(teasel.)

Galium. Calyx 4-toothed: corol flat, 4-cleft: fruit dry: seeds 2, roundish: (leaves stellate.) 47. 57—(bedstraw.) *S.*

Spermacoce Calyx 4-toothed: corol funnel-form, 4-cleft: capsule 2-celled: seeds 2, 2-toothed. 48. 57. *S.*

Diodia. Calyx 2-cleft: corol tubular, funnel-form, 4-cleft: capsule 2-celled, 1-seeded. 47. 57. *S.*

Hedyotis. Oldenlandia. Calyx 4-toothed or 4-parted: corol funnel-form, 4-cleft, or 4-petalled: capsule 2-celled, many-seeded; receptacle adnate to the partition. 13. 84. *S.*

Houstonia. Calyx half superior, 4-toothed: corol salver-form, 4-cleft: capsule 2-celled, many-seeded, opening transversely. 47. 57—(Venus-pride.) *S.*

Mitchella. Calyx 4-toothed: corols 2 on each germ, tubular, limb 4-parted, spreading, villose inside: stamens scarcely exsert: berry double, 4-seeded: stigmas 4 or 4-cleft. 48. 57—(patridge berry, checker berry.) *S.*

Linnæa. Calyx double; that of the fruit 2-leaved, inferior; that of the flower 5-parted: corol bell-form, 5-lobed: stamens somewhat didynamous: stigma globose: berry 3-celled, dry, generally producing a perfect seed in but one cell. 48. 58—(twin flower.)

Exotic.

Scabiosa. Common calyx many-leaved; proper one double, superior: receptacle chaffy or naked. (Flowers aggregate.) 47. 56—(scabious.)

Southern.

Polypremum. Calyx 4-parted: corol 4-cleft, wheel-form, bearded at the orifice: stamens included: capsule compressed, 2-celled, many-seeded. 40. 40.

Allionia. Common calyx oblong, simple, 3-flowered; proper calyx obsolete: corol irregular: receptacle naked. 48. 56.

Rubia. Calyx 4-toothed: corol 4 or 5-cleft, bell-form: berries 2, one-seeded, (stamens 4-5; leaves stellate.) 47. 57—(madder.)

(4-petalled.)

Cornus. Calyx 4-toothed: drupe with a 2-celled nut. Some species have a 4-leaved involucre. 45. 58—(dogwood, false box.) *S.*

Ludwigia. Calyx 4-parted, the divisions long, permanent: capsule 4-cornered, 4-celled, perforated at the top, many-seeded—(petals sometimes wanting.) 17. 88—(seed box.) *S.*

(Apetalous.)

Isnardia. Calyx bell-form, 4-parted or 4-cleft, superior: casule 4-celled, 4-cornered, many-seeded, surrounded by the calyx. 17. 88—(water purslane.)

Southern.

Eleagnus. Calyx 4-cleft, bell-form, coloured within: stamens alternating with the divisions of the calyx (corol?) anthers sub-sessile: style short: drupe dry, 1-seeded, marked with 8 furrows. 31. 24.

B. *Flowers inferior.*

(1-petalled.)

Plantago. Calyx 4-cleft: corol 4-cleft, reflexed: capsule 2-celled, opening transversely: stamens exsert, very long. 54. 31—(plantain, ribwort.) *S.*

Sanguisorba. Calyx 2-leaved: corol 4-cleft, wheel-form, adhering to the germ so as to appear as if superior: capsule 4-sided. 54. 92—(burnet saxifrage.) *S.*

BARTONIA. Calyx 4-parted, close-pressed, permanent: corol 4-cleft or 4-parted bell-form, permanent: stigma thick, glandulous, sub-bifid: capsule 1-celled, 2-valved, many-seeded. 20. 46—(screw-stem.)

EXACUM. Calyx deeply 4-parted: corol 4-cleft; tube globose: capsule 2-furrowed, 2-celled, many-seeded, opening at the top; cells 2-seeded. 47. 46.

SWERTIA. Calyx flat, 4 or 5-parted: corol 4-parted, wheel-form, with nectariferous pores at the base of the divisions: germ tapering to a point: style short, terminating in 2 stigmas: capsule 1-celled, 2-valved, acuminate. 47. 46—(false gentian.)

FRASERA. Calyx deeply 4-parted: corol 4-parted, spreading; segments with bearded glands in the middle: capsule compressed, sub-margined, 1-celled, 2-valved: seeds few, imbricated, oval, with a membranaceous margin. 41. 46—(pyramid flower.) *S.*

Southern.

LYCIUM. Corol tubular, having the throat closed by the beards of the filaments: stamens often 5: berry 2-celled, many-seeded. 28. 41—(matrimony.)

CENTUNCULUS. Calyx 4-cleft: corol 4-lobed, tubular, permanent, border spreading: stamens short, naked: capsule 1-celled, dividing into 2 hemispheres, many-seeded. 20. 34.

CALLICARPA. Calyx 4-cleft: corol tubular, border 4-cleft: stamens exsert: berry 4-seeded. 46. 72.

CENTAURELLA. Calyx 4-parted, close-pressed: corol somewhat bell-form, 4-parted; segments sub-erect: stigma thick, glandulous, sub-bifid: capsule 1-celled, 2-valved, many-seeded, surrounded by the permanent calyx and corol. 47. 46.

(4-petalled.)

AMMANNIA. Calyx bell-tubular, plaited, 8-toothed: petals 4, or none, on the calyx: capsule 4-celled, many-seeded—(sometimes 2-celled and 8-stamened.) 17. 91—(tooth-cup.) *S.*

PTELEA. Calyx 4-parted: petals 4, spreading: stigmas 2: samare compressed, orbicular, 2-celled, 2-seeded. 43. 94. *S.*

Southern.

KRAMERIA. Calyx none: corol 4 or 5-petalled: nectary 4-leaved, 2-formed: anthers perforated: drupe prickly. 33. 93.

(Apetalous.)

RIVINA. Calyx 4-parted, permanent: berry 1-seeded; seeds lenti-form, scabrous: stamens 8, 4, 12. 12. 29.

ALCHEMILLA. Calyx 8-cleft; segments spreading, alternately smaller: style lateral from the base of the germ: fruit surrounded by the calyx. 35. 92—(lady's mantle.)

ICTODES. SYMPLOCARPUS. POTHOS. General calyx a spathe; spadix simple, covered with flowers: perianth corol-like, deeply 4-parted, permanent, becoming thick and spongy: style pyramid-form, 4-sided; stigma simple, minute: berries globose, 2-seeded, inclosed in the spongy spadix-receptacle. 2. 7—(skunk-cabbage.)

Southern.

CAMPHOROSMA. Calyx pitcher-form, 4-parted, segments alternately larger: stamens exsert: style 2-cleft: capsule 1-seeded, covered by the calyx. 12. 29.

* Convallaria, Cardamine, Prinos, Calymenia.

ORDER II. DIGYNIA.

HAMAMELIS. Involucre 3-leaved: perianth 4-leaved or 4-cleft: petals 4, very long, linear: nut 2-celled, 2-horned. 54. 78—(witch hazel.) Flowers in autumn, and perfects its seed the following spring. *S.*

Southern.

APHANES. Calyx 3-cleft, alternate segments minute: petals none: stamens minute: styles 2: seeds 2, covered by the converging calyx, one of them often abortive. Stamens 1, 2, and 4.

* Sanguisorba, Cuscuta, Swertia, Oldenlandia, Gentiana.

ORDER IV. TETRAGYNIA.

ILEX. Calyx minute, 4 or 5-toothed: corol 4-parted, wheel-form: style 0: stigmas 4: berry 4-celled, cells 1-seeded. 43. 95—(holly.)

SAGINA. Calyx 4-leaved: petals 4, often caducous; capsules 4-celled, 4-valved, many-seeded. 22. 82—(pearl wort.) *S.*

TILLAEA. Calyx 3 or 4-parted: petals 3 or 4, equal: capsules 3 or 4, two or many-seeded. Sometimes there are 4 barren stamens. 13. 83—(pigmy-weed.)

POTAMOGETON. Calyx (or green corol) 4-leaved: petals 0: style 0: anthers sessile, alternating with the divisions: nuts 4, 1-seeded, sessile: seeds 4. 15. 13—(pond-weed.) *S.*

RUPPIA. Calyx 0: corol 0: seeds 4, pedicelled. 15. 13.

Southern.

MYGINDA. Calyx small, 4-parted: corol 4-petalled or deeply 4-parted: stigmas 2 or 4: drupe globose, 1-seeded. 43. 95.

CLASS V. PENTANDRIA.

ORDER I. MONOGYNIA.

A. *Flowers 1-petalled, inferior; seeds naked in the bottom of the calyx.*

Rough-leaved plants.

PULMONARIA. Calyx prismatic, 5-angled: corol funnel-form, with an open throat: stigma emarginate: seeds roundish, obtuse, not perforated at the base. 41. 42—(lung-wort.) *S.*

LITHOSPERMUM. Calyx 5-parted, with acute keeled divisions: corol funnel-form, with an open throat, border 5-lobed: stigma 2-cleft: seeds ovate, pointed, stony, not perforated: stamens and pistils inclosed in the tube of the corol. 41. 42—(stone-seed or gromwell.) *S.*

ONOSMODIUM. PURSHIA. Calyx deeply 5-parted, segments linear: corol oblong, somewhat bell-form, with the acute divisions converging, the upper part of the corol being ventricose and half 5-cleft, throat open; anthers sessile, enclosed: styles exsert, seeds not perforated at the base. (Spikes revolute.) 41. 42—(false gromwell.) *S.*

ECHIUM. Calyx 5-parted, segments subulate, erect: corol bell-form, obliquely and unequally 5-lobed, tube short, throat naked: stigma cleft: seeds tubercled, not perforated at the base. 41. 42—(viper's bugloss.)

MYOSOTIS. Calyx half 5-cleft or 5-cleft: corol salver-form, curved, 5-cleft, vaulted, the lobes slightly emarginate; throat closed with 5 convex converging scales: seeds smooth or echinate. 41. 42—(scorpion-grass.) *S.*

LYCOPSIS. Calyx 5-cleft: corol funnel-form; throat closed with ovate converging scales: seeds perforated at the base. 41. 42.

BATSCHIA. Calyx about 5-cleft: corol salver-form, with a strait tube longer than the calyx; having a bearded ring within at the base; throat naked, or partly closed, with rounded divisions: seeds hard and shining. 41. 42—(false bugloss.) *S.*

CYNOGLOSSUM. Calyx 5-parted: corol short, funnel-form, vaulted; throat closed by 5 converging convex processes: seeds depressed, affixed laterally to the style. 41. 42—(hound-tongue.) *S.*

ROCHELIA. Calyx 5-parted: corol salver-form, throat closed with converging scales: seeds prickly, compressed, affixed laterally to the style. 41. 42.

Exotic.

BORAGO. Corol wheel-form, the throat closed with rays. 41. 42—(borage.)

ANCHUSA. Calyx 5-parted : corol funnel-form, vaulted ; throat closed : seeds marked at the base, and their surface generally veined. 41. 42—(bugloss.)

SYMPHITUM. Limb, or upper part of the corol, tubular-swelling ; the throat closed with subulate rays. 41. 42—(comfrey.)

Southern.

HELIOTROPIUM. Calyx tubular, 5-toothed : corol salver-form, 5-cleft, with teeth or folds between the divisions ; throat open. (Spikes recurved, involute.) 41. 42—(turnsol.)

B. *Flowers* 1*-petalled, inferior ; seeds covered.*

(Capsule 1*-celled.)*

ANAGALLIS. Calyx 5-parted : corol wheel-form, deeply 5-lobed : capsule opening transversely, globose, many-seeded : stamens hairy. 20. 34—(scarlet pimpernel.) *S.*

LYSIMACHIA. Calyx 5-cleft : corol wheel-form, 5-cleft : capsule 1-celled, globular, 5 or 10-valved, mucronate : stigma obtuse. (In some species the filaments are united at the base.) 20. 34—(loose-strife.) *S.*

PRIMULA. Umbellets involucred : calyx tubular, 5-toothed : corol salver-form, 5-lobed ; tube cylindric ; throat open; divisions of corol emarginate : capsule 1-celled with a 10-cleft mouth : stigma globular. 21. 34—(primrose cowslip.)

DODECATHEON. Calyx 5-cleft : corol wheel-form, 5-parted, reflexed : capsule oblong, 1-celled, opening at the apex : stamens on the inside of the tube short ; anthers converging : stigma obtuse. 20. 34—(false-cowslip.)

MENYANTHES. Calyx 5-parted : corol hairy, funnel-form, 5-lobed, equal and spreading : capsule ovate, 1-celled, 2-valved, with the seeds attached to the valves : stigma 2-cleft, capitate. 47. 46—(buck bean.)

VILLARSIA. Capsule 1-celled, 1 or 2-valved, many seeded : corol wheel-form, 5-lobed ; divisions bearded at the base ; margin inflexed, having 5 glandular nectaries, alternating with the stamens : stigma 2-lobed. 47. 46—(spur-stem, heart water-shield.) *S.*

HOTTONIA. Calyx 5-parted : corol salver-form, 5-lobed : stamens on the tube of the corol : stigma globular : capsule 1-celled, globose, acuminate. 21. 34—(feather-leaf.) *S.*

SAMOLUS. Calyx 5-cleft, half superior, permanent : corol salver-form, 5-lobed, with 5 intermediate scales fencing up the stamens between them : capsule 1-celled, 5-toothed, many-seeded. 21. 34—(brookweed.) *S.*

SABBATIA. Calyx 5 to 12-parted : corol wheel-form, 5 to 12-parted : stigmas 2, spiral or coiled : anthers becoming revolute : capsule 2-valved, many-seeded. 47. 46—(centaury.) *S.*

HYDROPHYLLUM. Calyx 5-parted : corol bell-form, 5-cleft, with 5 margined, longitudinal, honey-bearing grooves inside : capsule globose, 2-valved : stamens exsert; filaments bearded in the middle : stigma 2-cleft. 41. 42—(water-leaf, burr-flower.) *S.*

Southern.

ELLISIA. Calyx deeply 5-parted : corol smaller, funnel-form, 5-cleft, naked within : stamens not exsert, filaments smooth ; anthers roundish : stigma 2-cleft : capsule 2-celled, 2-valved, 2-seeded ; seeds punctate. Capsule on the spreading calyx. 41. 42.

ANDROSACE. Flowers in an involucred umbel : calyx 5-cleft, permanent : corol salver-form, 5-lobed, tube ovate, orifices glandular : capsule 1-celled, globe-ovate, 5-valved, many-seeded. 20. 34.

(Capsule 2*-celled—rarely* 3*-celled.)*

PHACELIA. Calyx 5-parted : corol somewhat bell-form, 3-cleft, with 5 mar-

gined, longitudinal, honey-bearing grooves inside : styles filiform; stigmas 2: stamens exsert : capsule 2-celled, 2-valved, 4-seeded; with partitions attached to the middle of the valves. 28. 41. *S.*

Spigelia. Calyx 5-parted : corol funnel-form; border equally 5-cleft : anthers converging : capsule twinned, 2-celled, 4 valved, many-seeded. 47. 46. *S.*

Verbascum. Calyx 5-parted : corol wheel-form, 5-lobed, somewhat irregular : stamens declined, hairy : capsules 2-celled, 2-valved ; valves inflexed when ripened, many-seeded. 28. 41—(mullein.) *S.*

Nicotiana. Calyx urceolate, sub-tubular, 5-cleft : corol funnel-form, 5-cleft, limb plaited : stigma notched, capitate : stamens inclined : capsules 2-celled, 2 to 4-valved. 28. 41—(tobacco.)

Hyoscyamus. Calyx tubular, 5-cleft : corol funnel-form, 5-lobed, obtuse, irregular : stamens inclined : capsule 2-celled, covered with a lid. 28. 41—(henbane.)

Convolvulus. Calyx 5-parted, with or without 2 bracts : corol funnel-form, plaited : stigma 2-cleft or double : cells of the capsule 2 or 3 ; each 1 or 2-seeded. 29. 43—(bind-weed.) *S.*

Ipomæa. Calyx 5-cleft, naked : corol funnel or bell-form, with 5-folds : stigma globe-headed, papillose : capsule 2 or 3-celled, many-seeded. 29. 43—(cypress vine, morning glory.) *S.*

Southern.

Ophiorhiza. Calyx 5-cleft : corol 5-cleft, funnel-form : germ 2-cleft : stigmas 2 : capsule mitre-form, 2-lobed, 2-celled, many-seeded. 47. 46.

Bumelia. Calyx 5-parted : corol salver-form, deeply 5-parted : nectary (inner corol) 5-leaved : drupe 1-seeded. 43. 48.

Lisianthus. Corol tubular, ventricose ; divisions recurved : calyx bell-form, keeled : stigma in a 2-lobed head : capsule 2-celled, 2-furrowed, 2-valved : seeds numerous, sub-imbricate, surrounded with a very small membranaceous margin. 47. 46.

(Capsule 3 to 5-celled.)

Phlox. Calyx prismatic, 5-cleft ; segments converging : corol salver-form, 5-lobed, with a tube somewhat curved : filaments unequal in length, attached to the inside of the tube of the corol : stigmas 3-cleft : cells 1-seeded, seeds oblong, concave. 20. 44—(lichnedia.) *S.*

Polemonium. Calyx bell-form, half 5-cleft : corol bell-wheel-form, 4 or 5-lobed, erect : stamens bearded at the base, on 5 valves, closing the bottom of the tube : stigma 3-cleft, capsule roundish, 3-celled, many-seeded ; valves membrano-crustaceous : seeds oblong, sub-triangular. 29. 44—(Greek valerian, false Jacob's ladder.) *S.*

Diapensia. Calyx deeply 5-parted, at the base, imbricated with 3 leafets : corol salver-form ; limb flat, 5-cleft : stamens compressed, crowning the tube of the corol : stigmas 3 : capsule 3-celled, 3-valved, many-seeded. 21. 43—(mountain box.) *S.*

Datura. Calyx tubular, angled, caducous, with a permanent orbicular base : corol funnel-form, plaited : capsule 4-valved, 2-celled, and each cell half divided ; generally thorny. 28. 41—(thorn-apple.) *S.*

Azalea. Calyx 5-parted : corol tubular, half 5-cleft, somewhat oblique ; stamens on the receptacle, declined ; stigma declined, obtuse, usually ending with 5 short papillæ : capsule 5-celled, 5-valved, opening at the top. 18. 50—(wild honeysuckle.) *S.*

Southern.

Ipomeria. Calyx somewhat bell-form, membranaceous at the base, 3-cleft : corol funnel-form, 5-lobed, entire : stamens unequal, exsert : stigma 3-cleft : capsule 3-sided, 3-celled, 3-valved, many-seeded ; seeds angular, in 2 rows. 29. 43.

Collomia. Calyx wineglass-form, large, 5-cleft, acute : corol funnel-form with 5 short oval-oblong lobes ; tube straight, long, slender : capsule 3-corner-

ed, 3-celled, 3-seeded, and 3 obcordate valves; seed oblong, angular, with a muciolaginous covering. 29. 44.

Cantua. Calyx 3 to 5-cleft: corol funnel-form: stigma 3-cleft: capsule superior, 3-celled, 3-valved, many-seeded; seeds winged. 29. 44.

(Seed in a berry.)

Physalis. Calyx 5-toothed: corol bell or wheel-form; tube with 5 concave impressions: anthers converging: berries 2-celled, contained in an inflated calyx: seeds numerous. 28. 41—(winter cherry.) *S.*

Solanum. Calyx 5 to 10-parted, permanent: corol bell or wheel-form, 5-lobed, plaited: anthers thickened, partly united, with two pores at the top: berry containing many seeds, 2 to 6-celled. 28. 41—(potatoe, nightshade, bitter-sweet.) *S.*

Exotic.

Atropa. Corol bell-form: stamens distant: berry globular, 2-celled, sitting on the calyx. 28. 41—(deadly nightshade.)

Capsicum. Corol wheel-form: berry juiceless, inflated: anthers converging: calyx angular. 28. 41—(red pepper.)

Southern.

Androcera. (Solanum.) Calyx inflated, 5-cleft, caducous: corol sub-ringent, wheel-form, 5-cleft: stamens unconnected, unequal, declined, one larger and horn-form; anther with 2 terminal pores: style simple, declined; stigma not distinct: berry dry; seed without margins, rugose. 28. 41.

C. *Flowers* 1-*petalled, superior.*

(Seeds in a capsule.)

Campanula. Calyx mostly 5-cleft: corol bell-form, closed at the bottom by valves bearing the flattened stamens: stigma 3 to 5-cleft: capsules 3 to 5-celled, opening by lateral pores. 29. 52—(bell-flower.) *S.*

Lobelia. Calyx 5-cleft: corol irregular, often irregularly slitted: anthers cohering, and somewhat curved: stigma 2-lobed: capsule 2 or 3-celled. 29. 52—(cardinal flower, wild tobacco.) *S.*

Diervilla. Calyx oblong, 5-cleft, with 2 bracts: corol 5-cleft, twice as long as the calyx, funnel-form: border 5-cleft, spreading: stigma capitate: capsule oblong, 4-celled, naked, many-seeded. 48. 58—(bush honeysuckle.) *S.*

Southern.

Pinckneya. Calyx 5-parted, 1 or 2 of the divisions large, bract-like: corol long, tubular; border re-curved: stamens exsert: capsule roundish, 2 or 4-valved with contrary partitions: seed winged. 47. 57.

Chiococca. Calyx 5-toothed: corol funnel-form, equal: berry compressed, twinned, 2-seeded: seed oblong, compressed. 47. 57.

(Seeds in a berry.)

Lonicera. Capifolium. Calyx 5-toothed: corol tubular, long, 5-cleft, unequal: stamens exsert: stigmas globose: berry 2 or 3-celled, distinct; seeds many. 48. 58—(trumpet honeysuckle.) *S.*

Xylosteum. Calyx 5-toothed, with 2 connate bracts. corol tubular; border 5-parted, nearly equal: berries in pairs, united at their bases, or combined in one; 2-celled. 48. 58—(fly honeysuckle, twin-berry.)

Symphoria. Calyx small, 4-toothed, 2-bracted at the base: corol tubular, short, 5-cleft, sub-equal: stigma globose; berry ovate, small, crowned with the permanent calyx, 4-celled, 4 seeded; (sometimes two of the cells are abortive.) 48. 58—*S.*

Triosteum. Calyx permanent, of the length of the corol, 5-cleft, with linear divisions: corol tubular, 5-lobed, sub-equal, gibbous at the base: stigma capitate, sub-5-lobed: berry 3-celled, 3-seeded. 48. 53—(feverwort, horse gin seng.) *S.*

Exotic.

Mirabilis. Corol funnel-form, coarctate (compressed or narrowed) below;

calyx inferior: germ between the calyx and corol: stigma globular. 54. 32—(four o'clock.)

D. *Flowers 5-petalled, inferior.*

(Seed in a capsule.)

ITEA. Calyx 5-cleft, minute, bearing the 4 long linear reflexed petals; stigma capitate, 2-lobed: capsule 2-celled, 2-valved, many-seeded; the valves bearing the seeds, and having inflexed margins. 18. 50. *S.*

IMPATIENS. Calyx 2-leaved, deciduous: corol irregular, spurred: anthers cohering at the top: capsule 5-valved, bursting elastically when ripe. 24. 73—(touch-me-not, jewel weed.) *S.*

VIOLA. Calyx 5-leaved or deeply 5-cleft: corol irregular, with a horn behind; (sometimes the horn is wanting or a mere prominence) anthers attached by a membranous tip, or slightly cohering: capsule 1-celled, 3-valved. 29. 80—(violet.) *S.*

CLAYTONIA. Calyx 2-leaved or 2-parted, the leaves valve like: corol 5-petalled, emarginate: stigma 3-cleft: capsule 1-celled, 3-valved, 3 to 5-seeded. 13. 86—(spring beauty.) *S.*

CEANOTHUS. Petals scale-like, vaulted; claws long, standing in the 5-cleft, cup-form calyx; stigma 3; berry or capsule dry, 3-grained, 3-celled, 3-seeded, 3-parted, opening on the inner side. 43. 95—(New-Jersey tea.) *S.*

EUONYMUS. Calyx 5-parted or 5-cleft, flat: corol flat, inserted on the outer margin of a glandular disk: capsule 5-angled, 5-celled, 5-valved, coloured; cells 2-lobed: seeds calyptred or arilled. 43. 95—(spindle tree.) *S.*

CELASTRUS. Calyx 5-lobed, flat: corol spreading: capsule, obtusely 3-angled, 3-celled, berry-like; valves bearing the partitions on their centres; cells 1 or 2-seeded: stamens standing around a glandular 5-toothed disk: style thick: stigma 3-cleft: seeds calyptred or arilled. 43. 95—(staff tree, false bittersweet.)

Exotic.

GOMPHRENA. Calyx 5-leaved, coloured; exterior one 3-leaved; 2 leafets converging, keeled: petals 5, villose, (or rather no corol;) nectary cylindric, 5-toothed: capsule opening transversely, 1-seeded: style semi-bifid. 55. 30—(bachelor's buttons.)

Southern.

CYRILLA. Calyx minute, sub-turbinate, 5-parted: petals 5, stellate: stigmas 2 or 3: capsule 2-celled, 2-seeded, not opening: seed ovate, attached to the summit of a columella by a filament. 40. 41.

GALAX. ERYTHRORHIZA. SOLANDRA. Calyx 5-parted, permanent: corol twice as long as the calyx, 5-petalled, affixed to the base of the stamens; anther-bearing tube 10-cleft, the 5 shorter segments bearing the anthers: stigma 3-lobed: capsule 3-celled, 3-valved; seeds many, affixed to the columella. 28. 40.

ZIZYPHUS. Calyx 5-cleft: petals 5, resembling scales, inserted into the glandular disk of the calyx: styles 2: drupe 2-celled, 1 or 2-seeded; one cell often empty. 43. 95.

IONIDIUM. IONIA. (from Viola.) Calyx 5-leaved, with bases extended: corol somewhat 2-lipped, not spurred: stigma simple: capsule 1-celled, 3-valved; seeds on the middle valve. 29. 80.

(Seed in a berry.)

RHAMNUS. Calyx cup-form, 4 or 5-cleft: corol consists of scales fencing in or opposite to, the stamens, and inserted on the calyx, (sometimes wanting:) stigma 2 or 4-cleft; berry 3 or 4-seeded, (sometimes polygamous or dicœcious.) 43. 95—(buckthorn, dwarf alder.) *S.*

VITIS. Calyx 5-toothed, minute: petals cohering at the tip, hood-like, withering: style 0: stigma obtuse, capitate: berry 5-seeded, globular, often dicœcious; seeds sub-cordate. 46. 72—(grape vine.) *S.*

AMPELOPSIS. CISSUS. Calyx minute, 4 or 5-toothed: petals reflexed, spreading, 4 or 5, unconnected above, calyx-like, caducous: germs surrounded

with a glandular disk: berry 2-celled, 2 to 4-seeded. 46. 72—(false grape, creeper.) *S.*

E. *Flowers 5-petalled, superior.*

RIBES. Calyx bell-form, 5-cleft, (sometimes flat:) corol and stamens inserted on the calyx: style 2-cleft: berry many-seeded. 36. 85—(currant, gooseberry.) *S.*

Exotic.

HEDERA. Petals oblong: berry 5-seeded, surrounded by the calyx: style simple. 46. 58—(European ivy.)

F. *Corols wanting.*

THESIUM. COMANDRA. Calyx superior, half 5-cleft, with petal-like edging attached to its margin: anthers adhering to the edging by means of filamentous tufts: nut or capsule 1-seeded, covered with the permanent calyx. 31. 24—(false toad-flax.) *S.*

QUERIA. PARONYCHIA. ANYCHIA. Calyx 5-leaved or 5-parted, segments oblong, inferior, converging, tough, bag-like at the tip: capsule 1-celled: seed 1: stigmas sub-capitate: the capsule is bladder-like, and the seed somewhat reniform. Filaments 3 to 5. 22. 82—(fork chickweed.) *S.*

GLAUX. Calyx inferior, bell-form, 5-lobed, coloured: capsule globose, acuminate, 1-celled, 5-valved, 5-seeded, surrounded by the calyx: receptacle rounded and punctured. 17. 91—(sea milkwort.)

* Queria, Prinos, Polygonum.

ORDER II. DIGYNIA.

A. *Corol 1-petalled, inferior.*

[Plants with *follicles* are removed to class *gynandria*, order *pentagynia*.]

GENTIANA. Calyx 4 or 5-cleft: corol with a tubular base, bell-form, without pores, 4 or 5-cleft: stigmas 2, sub-sessile: capsule 1-celled, oblong: columellas 2, longitudinal: stamens but 4, when the divisions of corol are 4. 47. 46—(gentian.)

CUSCUTA. Calyx 4 or 5-cleft: corol 4 or 5-cleft, sub-campanulate, withering: capsule 2-celled, dividing transversely at the base; seeds binate. 29. 43—(dodder.)

Southern.

GELSEMINUM. Calyx 5-leaved, very small: corol funnel-form, border spreading, 5-lobed, nearly equal: capsule compressed, flat, 2-partible, 2-celled: seeds flat, attached to the margins of the valves. 40. 45.

HYDROLEA. Calyx 5-parted: corol wheel-form or bell-form: anthers cordate, and their filaments cordate at the base: styles long, diverging: stigmas head-peltate: capsule 2-celled, 2-valved. 29. 43.

DICHONDRA. Calyx 5-parted; segments spatulate: corol short, bell-form, 5-parted: stigma head-peltate: capsule sub-compressed, twinned, 2-celled, 1-seeded: seeds globose. 29. 43.

EVOLVULUS. Calyx 5-parted, corol bell-wheel-form, with sub-emarginate lobes: styles 2, deeply 2-cleft, with diverging capillary divisions: stigma simple: capsule 2-celled, 4-valved, 2 to 4-seeded. 29. 43.

B. *Corol 5-petalled.*

HEUCHERA. Calyx inferior, 5-cleft: corol on the calyx: petals small: capsule 2-beaked, 2-celled, many-seeded. 13. 84—(alum root.) *S.*

PANAX. Polygamous. Umbelled. Involucre many-leaved: calyx 5-toothed in the perfect flower, superior: berry heart-form, 2 or 3-seeded: calyx, in the staminate flower, entire. 46. 59—(ginseng.)

C. *Corol wanting.*

ATRIPLEX. Polygamous. Calyx 5-leaved, or 5-parted, inferior; style 2-parted: seed 1, vertical; fruit depressed. Pistillate flowers are intermixed, in which the calyx is 2-leaved or 2-parted. 12. 28—(orach.) *S.*

CHENOPODIUM. Calyx 5-parted, obtusely 5-angled, inferior: style deeply 2-cleft: seed 1, lens-like, horizontal, invested by the calyx. 12. 29—(pigweed, oak of Jerusalem.) *S.*

SALSOLA. Calyx 5-parted, with a capsular base: style 2-cleft: capsule 1-celled, with a spiral seed. The capsule is formed of the permanent calyx. 12. 29—(saltwort.) *S.*

ULMUS. Calyx bell-form, withering; border 4 or 5-cleft: seed 1, enclosed in a flat membranaceous samara. (Stamens vary from 4 to 8.) 53. 99—(elm.) *S.*

CELTIS. Polygamous. Perfect flowers have the calyx 5-parted: styles thickish, spreading: drupe 1-seeded: staminate flowers beneath the perfect ones, with 6-parted calyxes: stamens often 6. 53. 99—(nettle-tree.) *S.*

Exotic.

BETA. Calyx 5-leaved: seed kidney-form within the fleshy substance of the base of the calyx. 12. 29—(beet.)

Southern.

KOCHIA. Calyx inferior, bell-form, 5-cleft, forming a permanent band around the fruit, somewhat resembling 5 petals: corol none: styles short, stigmas 2 or 3, long, simple: seed incurved. 12. 29.

PLANERA. Polygamous. Calyx membranaceous, sub-campanulate, 4 or 5-cleft: corol none: stigmas 2, oblong, glandular, recurved: capsule (nut) sub-globose, membranaceous, 1-celled, not opening, smooth or scaly, 1-seeded, not winged. 53. 99.

D. *Plants umbelliferous; flowers 5-petalled, superior; seeds 2.*

(Seeds prickly or hispid.)

SANICULA. Seeds hispid with hooked prickles: calyx 5-parted, permanent: umbel sub-simple, capitate: involucre few-flowered. 45. 60—(sanicle.) *S.*

DAUCUS. Seeds striate on their joining sides; outer sides convex, having hispid ribs: involucre pinnatifid: flowers sub-radiated, abortive in the disk. 45. 60—(carrot.) *S.*

URASPERMUM. SCANDIX. MYRRHIS. CHAEROPHYLLUM.* Seeds sub-linear, solid, acute-angled, not striate; ribs 5, acute; angles a little furrowed, hispid; the joining sides furrowed, and attached to a 2-cleft columella-like receptacle: style subulate, permanent, rendering the seed caudate: involucre none or few-leaved. Fruit stiped, oblanceolate, polished, part of it hispid. 45. 60—(sweet cicely.) *S.*

ERYNGIUM. Fruit oval-oblong, with chaff-like scales, often hispid: calyx 5-parted, permanent: petals oblong, inflexed at the apex and adnate at the base: flowers sessile, capitate, intermixed with chaff: involucre many-leaved, subspinous. 45. 60—(sea holly.) *S.*

(Seeds with wing-like ribs.)

HERACLEUM. Seeds with winged margins and 3 ribs on the back, obtuse and 3 grooves on their outer sides, with the intervals dotted half way down: joining sides flat, with 2 dots; germ oval, emarginate at the apex: petals emarginate, inflexed: general involucre none, partial involucre 3 to 7-leaved: flowers somewhat radiated. 45. 60—(cow-parsley.)

ANGELICA. Seeds with 3 ribs on their backs, and winged margins; intervals between the ribs grooved: germ oval, corticate: general involucre none. 45. 60—(angelica.) *S.*

CNIDIUM. SELINUM. Seed ovate, solid; ribs 5, acute, somewhat winged; intervals furrowed, striate: general involucre wanting; partial, 1-leaved or none. 45. 60. *S.*

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* The *sweet cicely* is still an undefined plant. Bigelow has almost settled its character—all others have obscured it.

PASTINACA. Seeds emarginate at the apex, somewhat winged; ribs 3 besides the wings; intervals striate; joining sides 2-striate: germ oval, compressed: perianth-calyx entire: petals entire, incurved, sub-equal: involucre none. 45. 60—(parsnip.)

THAPSIA. Fruit narrow, slightly compressed, scarcely ribbed; wings 2, dorsal, marginal: involucre none. 45. 60.

Exotic.

ANETHEUM. Seeds flat or convex, 5-ribbed: germ lenticular, compressed. calyx and petals entire: involucres none. 45. 60—(fennel, dill.)

Southern.

PEUCEDANUM. Calyx minute, 5-toothed: petals oblong, incurved, equal: fruit oval, compressed, surrounded with a winged margin, having 5 striae on each seed, and elevated intervals, joining sides flat. 45. 60—(sulphur wort.)

FERULA. Calyx minute, entire: petals oblong, sub-equal: fruit sub-oval, compressed, flat, wing-margined: seeds with 3 dorsal lines; intervals and joining sides striate: general involucre caducous, partial ones many-leaved. 45. 60.

(Seeds with 3 ribs, nearly equal.)

HYDROCOTYLE. CRANTZIA. ERIGENIA. Seeds 3-ribbed, flat; dorsal rib sometimes obsolete; joining sides flat, linear: germ sub-orbicular or reniform, compressed laterally; styles short: stigmas capitate: perianth none: petals entire, spreading: involucres various 45. 60—(pennywort.) *S.*

SMYRNIUM. Seeds convex-gibbous, marked with 3 angular elevations: germ roundish-ovate and solid, somewhat compressed laterally: perianth obsolete: petals acuminate, incurved: involucre wanting or few-leaved. 45. 60—(alexanders.) *S.*

OENANTHE. Seeds 3-ribbed, (rarely 5-ribbed:) styles permanent: germ oblong-ovate, corticate, solid; apex denticulate: perianth slenderly 5-toothed: petals of the disk florets of the umbel cordate-inflexed, sub-equal; those of the ray-florets large and deformed: general involucre mostly wanting. 45. 60—(water dropwort.)

Exotic.

CARUM. Seeds oblong-ovate, striate: petals carinate, emarginate, inflexed: involucre about 1-leaved. 45. 60—(caraway.)

(Seeds with 5 ribs, nearly equal.)

CONIUM. Seeds 5-ribbed: ribs at first crenate with flat intervals between them: germ ovate, gibbous; perianth entire: petals unequal, cordate, inflexed: general involucre about 3 to 5-leaved; partial ones mostly 3-leaved, unilateral. 45. 60—(poison hemlock.)

SIUM. Seeds ovate, gibbous-convex, 5-ribbed, with 4 intervening grooves: germ oblong-ovate, glabrous, compressed laterally: perianth obsolete: petals cordate, inflexed; involucres many-leaved, entire. 45. 60—(water parsnip.) *S.*

CICUTA. Seeds gibbous-convex: ribs 5, obtuse, converging, with intervening tuberculate grooves and prominences; joining sides flat: germ sub-globose, corticate, compressed laterally: calyx obsolete, 5-toothed: petals cordate-inflexed: partial involucres 5 or 6-leaved, or wanting. 45. 60—(water hemlock.) *S.*

SISON. AMMI. Seeds 5 ribbed, ovate, solid; intervals convex; sides contracted: general involucre wanting, and sometimes the partial also. 45. 60—(bishop weed.) *S.*

LIGUSTICUM. Seeds with 5 acute ribs and 4 intervening grooves: germ oblong, corticate: general and partial involucres many-leaved. 45. 60—(lovage.) *S.*

Exotic.

APIUM. Seeds convex externally; ribs 5, small, a little prominent: germ sub-globose: perianth entire: petals equal, roundish, inflexed at the apex; involucre 1 to 3-leaved or wanting. 45. 60—(celery, parsley.)

CORIANDRUM. Seeds sub-spherical: germ spherical: perianth 5-toothed: petals cordate-inflexed, outer ones largest: involucre 1-leaved, or wanting. 45. 60—(coriander.)

Southern.

AETHUSA. Fruit ovate, sub-solid, having bark; ribs acute and turgid, intervals acute-angled; joining sides flat, striate: involucre 1-sided or none. 45. 60—(fool's parsley.)

SESELI. Fruit lance-ovate, solid; ribs somewhat obtuse; intervals partly grooved: general involucre none, partial ones many-leaved. 45. 60—(meadow-saxifrage.)

* Polygonum, Scleranthus, Salix.

ORDER III. TRIGYNIA.

A. *Flowers superior.*

VIBURNUM. Calyx 5-parted or 5-toothed, small: corol bell-form, 5-cleft, with spreading or reflexed lobes: stigmas almost sessile: berry or drupe 1-seeded. 43. 58—(snowball, sheep-berry, high cranberry.) *S.*

SAMBUCUS. Calyx 5-parted or 5-cleft, small: corol sub-urceolate, 5-cleft: stigma minute, sessile: berry globose, 1-celled, 3-seeded. 43. 58—(elder.) *S.*

B. *Flowers inferior.*

RHUS. Calyx 5-parted: petals 5: berry 1-seeded, small, sub-globular. 43. 94—(sumach, poison-ivy.) *S.*

STAPHYLEA. Calyx 5-parted, coloured: petals 5 on the margin of a glandular 5-angled disk: capsules inflated, connate; nuts globular, having a cicatrice, 1 or 2 remaining in each capsule, though several appear as rudiments while in bloom. 23. 95—(bladder nut.) *S.*

SAROTHRA. Calyx 5-parted: petals linear: capsule 1-celled, 3-valved, coloured. 20. 82—(pin-weed.) *S.*

Southern.

TURNERA. Calyx 5-cleft, funnel-form, often with bracts at the base: petals 5, with claws, inserted on the calyx: stigmas many-cleft: capsule 1-celled, 3-valved. 37. 79.

LEPUROPETALON. Calyx 5-parted: petals 5, resembling scales, inserted into the calyx: capsule free near the summit, 1-celled, 1-valved. 21. .

ORDER IV. TETRAGYNIA.

PARNASSIA. Calyx inferior, permanent, 5-parted: corol 5-petalled: nectaries 5 fringed, with stamen-like divisions; globular tips: stigmas sessile: capsule 4-valved, 1 or 2-celled: seed membranaceous-margined. 14. 64—(parnassus grass, flowering plantain.) *S.*

ORDER V. PENTAGYNIA.

ARALIA. Umbellets involucred; perianth 5-toothed, superior petals 5: stigmas sessile, sub-globose: berry crowned, 5-celled; cells 1-seeded. 46. 59—(spikenard, wild sarsaparilla.) *S.*

STATICE. Calyx 1-leaved, entire, plaited, scarious, inferior: corol 5-petalled: capsule 1-seeded, valveless, covered with the permanent calyx. 48. 33—(marsh rosemary.) *S.*

LINUM. Calyx 5-leaved or 5-parted, permanent: corol 5-petalled, inferior, with claws: capsule 5 or 10-valved, 10-celled: seeds solitary, ovate, compressed: filaments spreading or united at the base. 14. 73—(flax.) *S.*

SIBBALDIA. Calyx 10-cleft, with the alternating segments narrower: petals 5, inserted in the calyx: styles attached to the germ laterally: seeds 5, in the bottom of the calyx. 35. 92. *S.*

* Spergula, Cerastium.

Order VI. Hexagynia.

Drosera. Calyx inferior, deeply 5-cleft, permanent: petals 5, marcescent: anthers adnate: styles 6, or one deeply divided: capsule round, 1 or 3-celled, many-seeded; valves equalling the number of stigmas. 20. 68—(sundew.) The leaves of all the species are beset with glandular hairs resembling dew. *S.*

Order XIII. Polygynia.

Zanthorhiza. Calyx 0: petals 5: nectaries 5, pedicelled: capsule half 2-valved, 1-seeded, about 5 in number. 26. 61—(yellow-root.) *S.*

CLASS VI. HEXANDRIA.

Order I. Monogynia.

A. *Flowers having a perianth and corol, without a spathe.*

Tradescantia. Calyx inferior, 3-leaved: corol 3-petalled; filaments with jointed beards: capsules 3-celled, many seeded. 6. 13—(spider-wort.) *S.*

Caulophyllum. Leontice. Calyx inferior, 3 to 6-leaved, caducous: petals 6, opposite to the leaves of the calyx: nectaries 6, sub-reniform, fleshy, glutinous at the margin, attached to the claws of the petals: anthers adnate to the filaments, opening longitudinally: drupe stiped, 1-seeded: anthers 2-celled, dehiscent at the margin. 24. 61—(pappoos root.) *S.*

Berberis. Mahonia. Calyx inferior, 6-leaved: petals 6, with 2 glands at the claw of each: style 0: berry 1-celled, 2 or 4-seeded: (stigma umbilicate: stamens spring up on being irritated.) 54. 78—(barberry.) *S.*

Prinos. Calyx inferior, 6-cleft, small: corol wheel-form, 6-cleft or 6-parted: berry 6-seeded: seeds nut-like. 43. 95—(winter-berry.) *S.*

Flœrkea. Nectris? Calyx 3-leaved, inferior: corol 3-petalled, shorter: style 2-cleft: capsule bladder-like, 2 or 3-grained. 15. 22—(false mermaid.)

Cleome. Polanisia. Calyx 4-leaved, inferior: petals 4, ascending to one side: glands 3, one at each sinuate division of the calyx except the lowest: stamens from 6 to 20, or more: capsule stiped or sessile, silique-like, often 1-celled, 2-valved. Does not belong to the class Tetradynamia by its natural or artificial characters. It has *no silique*, though the capsule appears like a silique, until it is opened. 25. 64—(false mustard.)

Southern.

Tillandria. Calyx 3-cleft, sub-convolute, permanent: corol 3-cleft, bell-tubular: capsule 1 to 3-celled: seed comose. 10. 17.

Diphyllia. Calyx 3-leaved, caducous: petals 6, opposite to the divisions of the calyx: anthers adhering to the filaments, with cells opening longitudinally: berry 1-celled: seeds 2 or 3, roundish. 54. 78.

B. *Flowers having a spathe or glume, without a perianth.*

Amaryllis. Corol superior, 6-petalled, unequal: filaments unequal in proportion or direction, declined, inserted in the throat of the tube. 9. 17—(atamask lily.) *S.*

Allium. Spathe many-flowered: corol inferior, 6-parted, very deeply divided: divisions ovate, spreading: capsule 3-celled, 3-valved, many-seeded: (flowers in close umbels or heads.) 9. 16—(leek, garlic, onion, cives.) *S.*

Hypoxis. Glume-like spathe, 2-valved: corol superior, 6-parted, permanent: capsule elongated, narrow at the base, 3-celled, many-seeded: seed roundish. 10. 17—(star-grass.) *S.*

Pontederia. Corol inferior, 6-cleft, 2-lipped, with 3 longitudinal perforations below: capsule with utricles, fleshy, 3-celled, many-seeded: 3 stamens commonly inserted on the tip, and three on the tube of the corol. 6. 17—(pickerel-weed.) *S.*

Exotic.

GALANTHUS. Petals 3, concave, superior: nectaries (or inner petals) 3, small, emarginate: stigma simple. 6. 17—(snowdrop.)

NARCISSUS. Corol bell-form, spreading, 6-parted or 6-petalled, equal, superior: nectary bell-form, 1-leafed, enclosing the stamens. 9. 17—(jonquil, daffodil.)

Southern.

PANCRATIUM. Corol superior, funnel-form, with a long tube; nectary 12-cleft, bearing the stamens 9. 17.

BRODIAEA. Corol inferior, bell-form, 6-parted; filaments inserted in the throat of the corol: germ pedicelled: capsule 3-celled, many-seeded. 9 17.

CRINUM. Corol superior, funnel-form, half 6-cleft; tube filiform; border spreading, recurved: segments subulate, channelled; filaments inserted on the throat of the corol, separate. 9. 17.

C. *Flowers having no calyx.*

CONOSTYLIS. Corol more than half inferior, 6-cleft, permanent, with branching hairs: anthers erect: style conic, 3-parted: stigma simple: capsule opening at top, 3-celled, 3-valved, many-seeded. 10. 17. *S.*

ALETRIS. Corol superior, funnel-form, wrinkled, somewhat 6-cleft, with the stamens inserted at the base of its divisions: style 3-sided, 3-partible: capsule 3-celled, many-seeded, half inferior, opening at the summit, when mature. 10. 16—(false aloe.) *S.*

HEMEROCALLIS. Corol 6-parted, tubular, funnel-form: stamens declined: stigma small, simple, somewhat villose. 10. 16—(day-lily.)

AGAVE. Corol erect, superior, tubular, or funnel-form: filaments erect, longer than the corol: capsule triangular, many-seeded. 10. 17—(agave.) *S.*

PHALANGIUM. Corol inferior, 6-petalled, spreading: filaments smooth: capsule ovate: seeds angular. 10. 16.

NARTHECIUM. Corol 6-petalled, inferior, spreading, permanent: filaments thread-form, hairy: capsule prismatic, 3-celled; seeds many, appendaged, or long and slender, at both ends. 10. 16—(false asphodel.)

ORNITHOGALUM. Corol 6-petalled, inferior, erect, permanent, spreading above the middle: filaments dilated, or subulate, at the base: capsule roundish, angled, 3-celled; seed roundish, naked. 10. 16—(star of Bethlehem.) *S.*

LILIUM. Corol inferior, liliaceous, 6-petalled: petals with a longitudinal line from the middle to the base: stamens shorter than the style: stigma undivided: capsule sub-triangular, with the valves connected by hairs crossing as in a sieve. 10. 14—(lily.) *S.*

ERYTHRONIUM. Corol liliaceous, inferior, 6-petalled; petals reflexed, having two pores and two tubercle-form nectaries at the base of the three inner alternate petals: capsule somewhat stiped; seeds ovate. 11. 14—(dog-tooth violet, or adder-tongue.) *S.*

UVULARIA. Corol inferior, 6-petalled, with a nectariferous hollow at the base of each petal: filaments very short, growing to the anther: stigmas reflexed: capsule 3-cornered, 3-celled, 3-valved: with transverse partitions: seeds many, sub-globose, arilled at the hilum. 11 14—(bellwort.) *S.*

STREPTOPUS. Corol inferior, 6-petalled, sub-campanulate: stigma very short: berry sub-globose, smooth, 3-celled: seeds few, not arilled on the hilum. 11. 14—(rose bellwort.) *S*

* CONVALLARIA. SMILACINA. POLYGONATUM. DRACAENA. Corol inferior, 6-cleft: berry globose, 3-celled, spotted before ripening. 11. 12—(solomon seal.) *S.*

ASPARAGUS. Corol inferior, 6-parted, erect; the three inner divisions reflexed at the apex: style very short; stigmas 3: berry 3-celled, cells 2-seeded. 11. 12—(asparagus.) *S.*

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* I follow Dr. Torrey, with pleasure, in bringing back these three genera to the Convallaria.

Exotic.

POLYANTHES. Corol funnel-form, incurved : filaments inserted in the throat : stigma 3-cleft : germ within the bottom of the corol. 10. 17—(tuberose.)

HYACINTHUS. Corol roundish or bell-form, equal, 6-cleft : three nectariferous pores at the top of the germ : stamens inserted in the middle of the corol : cells somewhat 2-seeded. 10. 16—(hyacinth.)

TULIPA. Corol 6-petalled, liliaceous : style none ; stigma thick : capsule oblong, 3-sided. 10. 14—(tulip.)

ASPHODELUS. Corol 6-parted, spreading : nectary covering the germ with 6 valves. 10. 16—(king's spear, or asphodel.)

Southern.

YUCCA. Corol inferior, bell-form, segments not nectariferous : filaments subclavate : style none : capsule oblong, with 3 obtuse angles, 3-celled, opening at the summit : seeds flat. 10. 14—(adam's needle.)

FRITTILLARIA. Corol inferior, 6-petalled, bell-form, with a nectariferous cavity above the claw of each : stamens of the length of the corol : seeds flat. 10. 14—(crown imperial.)

SCILLA. Corol 6-petalled, spreading, caducous : filaments thread-form, attached to the base of the petals. 10. 14—(squills.)

D. *Flowers incomplete ; having perianth-like calyx or corol ; but neither in perfection.*

ORONTIUM. Receptacle spadix-like, cylindric, covered with florets : spathe 0 : corol 6-petalled, naked : style 0 : capsule bladder-like, 1-seeded. 2. 7—(floating arum.) *S.*

ACORUS. Receptacle spadix-like, cylindric, covered with florets : calyx 6-parted, naked : corol 0 ; (or calyx none, corol 6-parted or 6-petalled :) style none ; stigma a mere point : capsule 3-celled, 3-seeded. 2. 13—(sweet flag.) *S.*

JUNCUS. Glume or outer calyx, 2-valved : perianth inferior, 6-leaved, glume-like, permanent : stigmas 3 : capsules 1 or 3-celled, 3-valved, many-seeded ; seeds attached to a partition in the middle of each valve. 5. 13—(rush-grass, bulrush.) *S.*

LUZULA. Glume, or outer calyx, 2-valved ; perianth 6-leaved, glume-like : capsule 3-celled, 3-valved, many-seeded ; valves without partitions. 5. 13—(false rush-grass.) *S.*

* Trientalis, Laurus, Lythrum, Corydalis, Polygonum.

ORDER II. DIGYNIA.

Exotic.

ORYZA. Calyx, glume 2-valved, 1-flowered : corol 2-valved, adhering to the seed. 4. 10—(rice.)

Southern.

OXYRIA. Perianth simple, 4-leaved, 2 inner leafets largest : corol none : nut 3-sided, with a broad membranaceous margin : stamens 2 to 6 : stigma large, plumose. 12. 28

NECTRIS. CABOMBA Calyx inferior, 6-leaved : corol none : capsules 3, not opening. The calyx may be considered as 6-parted, and the 3 inner divisions are petal-like, obtuse, and smaller. The capsule is bladder-like, 1 or 2-celled, 1 or 2-seeded. 15. 22.

ORDER III. TRIGYNIA.

MELANTHIUM. Polygamous. Calyx 0 : corol wheel-form, 6-parted or 6-petalled, each part with 2 glands at the base : stamens from the lengthened claws of the petals : capsule ovatish, somewhat 3-cleft at the apex, 3-celled : seeds membrane-winged, numerous. 10. 13—(black-flower.) *S.*

ZIGADENUS. Calyx 6-leaved, spreading, with 2 glands above the narrow base of each leaf: stamens inserted in contact with the germ: capsule membranaceous, 3-celled, many-seeded. (Calyx is coloured and corol-like.)—(zigadene.) *S.*

VERATRUM Polygamous or dioecious. Calyx 0: corol 6-parted or 6-petalled, sessiles, spreading, without glands: capsules 3, adnate, many-seeded. (The staminate flowers have the rudiment of a pistil.) 10. 13—(itchweed, or swamp hellebore.) *S.*

HELONIAS. Calyx 0: corol 6-parted or 6-petalled, spreading, glandless: styles distinct: capsules 3-celled, 3-horned, few seeded. 10. 13—(helonias.) *S.*

XEROPHYLLUM. Corol wheel-form, deeply 6-parted: filaments contiguous at the base: stigmas 3, revolute, sub-connate at the base: capsule sub-globose, opening at the top into three fissures, 3-celled, each 2-seeded. 10. 13.

TOFIELDA. Calyx 3-cleft or 3-leaved, inferior: petals 6: anthers roundish: styles vertical, short: capsules 3, joined at the base, many-seeded. 10. 13. *S.*

SCHEUCHZERIA. Calyx 6-parted, inferior: corol 0: (or corol 6-parted and calyx 0:) anthers linear: stigmas sessile, lateral: capsules 3, inflated, 1 or 2-seeded. 5. 13—(less flowering rush.)

TRIGLOCHIN. Calyx 3-leaved, inferior: corol 3-petalled, resembling the calyx: (or a double calyx with 3 outer and 3 inner leaves) stamens 3 or 6: styles 0: stigmas 3 or 6, hairy: capsules 3 or 6, united above and separate at their bases, 1-seeded, not opening. 5. 13—(arrow-grass.) *S.*

GYROMIA. MEDEOLA. Calyx 0: corol deeply 6-parted, revolute: anthers slightly attached to the filaments: style 0: stigmas 3, long-linear, revolute-spreading, slightly united at the base: berry 3-celled, cells 5 or 6-seeded: seeds compressed, 3-sided. 11. 12—(indian cucumber.) *S.*

TRILLIUM. Calyx 3-leaved, inferior, spreading: corol 3-petalled: styles 0: stigmas 3: berry 3-celled, many-seeded. 11. 12—(false wake robin.) *S.*

RUMEX. Calyx 3-leaved: petals 3, valve-like, converging, (or calyx 6-leaved, and corol none:) stigmas many-cleft: seed 1, naked, three-sided. 12. 28—(dock, field-sorrel.) *S.*

Southern.

SABAL. Flowers perfect: spathes partial: filaments unconnected, thickish at the base: drupe spherical, dry-cartilaginous: seed 1, indurated. 1. 11—(false fan-palm.)

CHAMAEROPS. Flowers polygamous: spathe compressed; spadix branched: perianth 3-parted: corol 3-petalled: filaments partly united: drupe 3-celled, 2 of them often empty. The staminate flowers grow on distinct plants. 1. 11—(fan palm.)

CALOCHORTUS. Corol 6-parted, spreading; 3 inner segments larger, with the upper side woolly, and marked near the base with a roundish smooth spot: filaments short, inserted on the base of the petals: anthers arrow-form, erect: stigmas reflexed: capsule 3-celled. 10. 17.

NOLINA. Corol 6-parted, spreading; segments nearly equal: styles very short; stigmas recurved: capsule 3-sided, membranaceous, 3-celled, opening by a divisible partition: seed 1, incurved, convex, abortive in 1 or 2 of the cells. 10. 13.

ORDER VI. HEXAGYNIA.

* Saururus (rarely.)

Southern.

WENDLANDIA. MENISPERMUM? Calyx 6-leaved: corol 6-petalled (succulent?) styles reclined: germs 6: berries with 1 compressed nut-like seed. 11. 17—(false moonseed.)

Order XIII. Polygynia.

Alisma. Calyx 3-leaved: petals 3: capsules numerous, 1-seeded, not opening. 5. 13—(water-plantain.) *S.*

CLASS VII. HEPTANDRIA.

Order I. Monogynia.

Trientalis. Calyx 7 leaved: corol 7-parted, equal, flat: berry juiceless, 1-celled, many-seeded: number of stamens variable. 20. 34—(chick-winter-green.)

Æsculus. Calyx inflated, 4 or 5 toothed: corol 4 or 5-petalled, inserted on the calyx, unequal, pubescent: capsule 3-celled: seeds large, solitary, chesnut-form. 23. 66—(horse-chesnut.) *S.*

Order III. Trigynia.

* Polygonum.

Order IV. Tetragynia.

Saururus. Calyx in an ament or spike, with 1-flowered scales: corol 0 anthers adnate to the filaments: germ 4: berries or capsules 4, 1-seeded: stamens 6, 7, 8 or more. 2. 6—(lizard tail.) *S.*

CLASS VIII. OCTANDRIA.

Order 1. Monogynia.

A. *Flowers superior.*

Rhexia. Calyx pitcher-form, 4 or 5-cleft: petals 4, oblique, inserted on the calyx: anthers declined, attached to the filaments behind, naked at the base. capsule 4-celled, within the calyx, setose: seeds numerous, cochleate. 17. 90—(deer-grass.) *S.*

Oenothera. Calyx 4-cleft, tubular, caducous: divisions deflected: petals 4, inserted on the calyx: stigma 4-cleft: capsule 4-celled, 4-valved; seeds not feathered, affixed to a central 4-sided columella. 17. 88—(scabish, or tree-primrose.) *S.*

Gaura. Calyx 4-cleft, tubular: corol 4-petalled, ascending towards the upper side: nut 4-cornered, 1-seeded. 17. 88—(virginian loose-strife.) *S.*

Epilobium. Calyx 4 cleft, tubular: corol 4-petalled: capsule oblong and of great length: seeds feathered. 17. 88—(willow-herb.) *S.*

Oxycoccus. Calyx superior, 4-toothed: corol 4-parted, the divisions sub-linear, revolute: filaments converging; anthers tubular, 2-parted: berry many-seeded. 18. 51—(cranberry.) *S.*

Exotic.

Fuchsia. Calyx funnel-form, coloured, superior, caducous: petals (or nectaries) 4, sitting in the throat of the calyx, alternating with its divisions: stigma 4-sided-capitate: berry oblong, 4-celled: seeds numerous. 17. 88—(ear-drop.)

Southern.

Clarkia. Calyx 4-cleft, tubular: corol 4-petalled, 3-lobed-crossform, with claws: stamens 4, with roundish anthers, imperfect: stigma petal-like, 4-lobed: capsule 4-celled. 17. 88—(false tree-primrose.)

B. *Flowers inferior.*

Menziesia. Calyx monophyllous: corol monopetalous, ovate: filaments inserted on the receptacle; anthers awnless: capsules 4-celled, the partitions from the inflexed margins of the valves: seeds many, oblong. 18. 50. *S.*

ACER. Polygamous. Sometimes hexandrous. Calyx 5-cleft: corol 4 or 5-petalled, or wanting: samaras 2, united at the base, 1-seeded, often one rudiment of a seed. 23. 66—(maple.) *S.*

DIRCA. Calyx 0: corol tubular; limb obsolete, unequal; stamens unequal, longer than the tube of the corol: style filiform: berry or drupe 1-seeded. (The corol may be taken for a coloured calyx.) 31. 25—(leather-wood.) *S.*

JEFFERSONIA. Calyx 4 or 5-leaved, coloured, caducous: corol 8-petalled: capsule obovate, sub-stiped, 1-celled, dehiscent below the top: seeds many, oblong, arilled at the base. 27. 62—(twin-leaf.)

Exotic.

ERICA. Calyx 4-leaved, permanent: corol 4-cleft, permanent: filaments inserted on the receptacle: anthers bifid: capsules membranaceous, 4 to 8-celled, the partitions from the margins of the valves: seeds many in each cell. 18. 51—(heath.)

DAPHNE. Calyx 0: corol 4-cleft, withering, including the stamens: drupe 1-seeded. 31. 25—(mezereon.)

TROPAEOLUM. Calyx 4 or 5-cleft, coloured, spurred: petals 4 or 5, unequal: nuts leathery, sulcate. 23. 73—(nasturtion.)

Southern.

ELLIOTTIA. Calyx 4-toothed, inferior: corol deeply 4-parted: stigma capitate. 18. 51—(false spiked alder.)

ORDER II. DIGYNIA.

CHRYSOSPLENIUM. Calyx superior, 4 or 5-cleft, coloured: corol 0: capsule 2-beaked, 1-celled, many-seeded. (The terminal flowers in the European specimens are decandrous, but the plant is always octandrous in America.) 13. 34—(golden saxifrage, water-carpet.) *S.*

ORDER III. TRIGYNIA.

POLYGONUM. Calyx inferior, 5-parted, coloured: corol 0; seed 1, angular, covered with the calyx. Stamens and pistils vary in number. The calyx in some species might be taken for a corol. 12. 28—(knot-grass, water-pepper, buckwheat, hearts-ease.) *S.*

Southern.

BRUNICHIA. Calyx tubular, inflated, 5-cleft; angular at the base and decurrent into the dilated peduncle, becoming coriaceous: corol none: styles short: stigmas 2-cleft: pericarp lobed; seed 1, 3-sided. Stamens vary from 8 to 10. 12. 28.

CARDIOSPERMUM. Calyx 4-leaved: petals 4: nectary 4-leaved, unequal: capsule membranaceous, inflated, 3-lobed, 3-celled: seeds round, marked at the hilum with a heart-form spot. 23. 65—(heart seed.)

SAPINDUS. Calyx 4-leaved: petals 4, glandular at the base: capsule 3, connate, fleshy, inflated, 2 of them often empty: seed spherical. 23. 65—(soap-berry.

ORDER IV. TETRAGYNIA.

Southern.

ADOXA. Calyx inferior, 2 or 3-cleft: corol 4 or 5-cleft, apparently superior: berry 1-celled, 4 or 5-seeded, attached to the calyx. Flowers lateral, stamens 8 to 10. 13. 34.

CLASS IX. ENNEANDRIA.

ORDER I. MONOGYNIA.

LAURUS. Calyx 4 to 6-parted: corol 0: nectaries 3, each a 2-bristled or 2-lobed gland, surrounding the germ: drupe 1-seeded. Stamens vary from 3 to

14, but they are generally in two series of 6 each, with 3 of the inner series barren—often dioecious. The calyx may be taken for a corol. 12. 27—(sassafras, spice-bush.) *S.*

Order II. Digynia.

Southern.

Eriogonum. Calyx wineglass-form, tubular at the base; border 6-cleft: segments unequal, villous outside: corol none: seed 1, 3-sided, without margins, covered by the calyx. Flowers involucred—no stipules. 12. 28.

Plera. Calyx none: corol 6-parted, spreading; segments linear, acute: capsule roundish, 3-angled, 3-celled; partitions obsolete: seeds numerous, minute, sub-terete and caudate, attached to the margin of the valves. 5. 13.

Order III. Trigynia.

Exotic.

Rheum. Calyx none: corol 6-cleft, permanent: seed 1, 3-sided. 12. 28—(rhubarb.)

CLASS X. DECANDRIA.

Order I. Monogynia.

A. *Flowers polypetalous, irregular, (mostly papilionaceous.)*

Cassia. Calyx 5-leaved: corol 5-petalled: anthers, 3 lower ones beaked and on longer incurved filaments; legume membranaceous. 33. 93—(cassia.) *S.*

Baptisia Podalyria. Calyx 4 or 5-cleft half-way, (sometimes 4-toothed) somewhat 2-lipped: corol papilionaceous; wings of the length of the reflexed banner: stamens caducous: legume inflated, smooth, many-seeded. 32. 93—(wild indigo.) *S.*

Cercis. Calyx 5-toothed, gibbous below: corol papilionaceous; wings longer than the banner; keel 2-petalled: legume compressed: seed-bearing suture margined: seeds obovate. 33. 93—(judas-tree.) *S.*

Rhodora. Calyx 5-toothed: corol 3-petalled; or 2-petalled, with the upper one deeply parted: stamens declined: capsule 5-celled, 5-valved, opening at the top; partitions formed of the inflexed margins of the valves. 18. 50—(rhodora.)

Southern.

Sophora. Calyx 5-toothed, bell-form, gibbous on the upper side: corol papilionaceous, wings of the length of the banner: legume with globular joints. 32. 93.

Thermia. Thermopsis. Calyx somewhat bell-form, half 4-cleft; the upper segment truncate and emarginate. corol papilionaceous, with petals about equal length; banner reflexed at the sides, keel obtuse: legume many-seeded, compressed, falcate, tapering to the base. 32. 93.

Virgilia. Calyx 5-cleft: corol papilionaceous, with petals of about equal length; sides of the banner not reflexed: stigma beardless: legume compressed, oblong, many-seeded. 32. 93.

Pomaria. Calyx turbinate, 5-parted, caducous: petals 5, with short claws, upper ones concave, short: filaments hirsute below: stigma capitate: legume 1-celled, 2-seeded. 32. 93.

B. *Flowers polypetalous, regular.*

Pyrola. Calyx 5-parted: petals 5; styles longer than the stamens: anthers with 2 pores at the base before, and the top after, the opening of the flower: capsule 5-celled, dehiscent at the angles near the base. 18. 51—(shinleaf.) *S.*

Chimaphila. Calyx 5-parted: petals 5: anthers beaked, with 2 pores at the base before, and at the top after, the opening of the flower: style immersed.

stigma thick, orbiculate: capsule 5-celled, dehiscent at the angles near the summit. 18. 51—(prince's pine, pipsissiwa.) *S.*

LEDUM. Calyx small, 5-toothed: corol flat, 5-petalled or 5-parted: stamens exsert: anthers opening by 2 terminal pores: capsule 5-celled, dehiscent at the base, 5-valved, valves with approximating, inflexed margins: receptacle 5-lobed; columella 5 angled, pedicelled: seeds numerous, winged. (Stamens sometimes 5; leaves downy.) 18. 50—(labrador-tea.)

LEIOPHYLLUM. Calyx 5-parted: corol flat, 5-parted or 5-petalled: stamens longer than the corol, with lateral anthers opening longitudinally on their insides: capsule 5 celled, dehiscent at the top, 5-valved; valves ovate with margins inflexed, remote, straight; columella sub-ovate, terete, rugose: seeds small, not winged, (leaves always glabrous.) 18. 50—(sleek leaf.) *S.*

CLETHRA. Calyx 5-parted, permanent: corol 5-petalled: style permanent: stigma short, 3-cleft: capsule 3-celled, 3 valved, enclosed by the calyx. (Spiked.) 18. 51—(sweet pepper-bush.) *S.*

Exotic.

RUTA. Calyx 5-parted: petals concave: receptacle surrounded by 10 nectariferous dots: capsule lobed (Petals sometimes 4, and stamens 8.) 26. 81—(rue.)

Southern.

MYLOCARUM. Calyx 5-toothed: petals 5: stigma capitate, 3-cornered, sessile: capsule superior, somewhat corky, 2 or 3-winged, 3-celled, 1-seeded: seed subulate. 23. 71—(buckwheat tree.)

MELIA. Calyx 5-parted, small: petals 5: nectary cylindric, 10-toothed; teeth 2-cleft at the points, orifice bearing the anther within: style cylindric: stigma 5-rayed: drupe lobose; nut 5-celled, 5-seeded. 23. 71. (pride of china.)

TRIBULUS. Calyx 5-parted: petals 5, spreading: style none: stigma partly 5-cleft: capsules generally 5, gibbous sub-spinose, 2 or 3-seeded. 14. 87—(caltrops.)

DIONAEA. Calyx 5-parted or 5-leaved: petals 5: stigma fringed: capsule roundish, gibbous, 1-celled, many seeded. Petals sometimes 6. 20. 68—(venus fly-trap.)

JUSSIEUA. Calyx 4 or 5-parted, superior, permanent: petals 4 or 5, ovate; capsule 4 or 5-celled, 4 or 5-valved, oblong, cylindric or angular; many-seeded; seeds minute, attached to an angular columella. Stamens sometimes but 8. 17. 88.

PROSOPIS. Calyx hemispherical, 4-toothed: petals 5, lance-linear, recurved at the apex: filaments capillary, adnate at the base: stigma simple; legume long, many-seeded. 33. 93.

C. *Flowers monopetalous.*

ARBUTUS. Calyx inferior, 5-parted, minute: corol ovate, pellucid at the base; border small, 5-cleft, revolute: filaments hairy: berry 5-celled. 18. 51—(bear berry.)

EPIGAEA. Calyx double, outer 3-leaved, inner 5-parted: (or calyx 5-parted, with 3 bracts) corol salver-form; border 5-parted, spreading; tube villose within: capsule 5-celled, many-seeded; receptacle 5-parted. 18. 51—(trailing arbutus.) *S.*

GAULTHERIA. Calyx inferior, double; outer 2-leaved, inner 5-cleft; (or calyx 5-cleft, with 2 bracts:) corol ovate; border small, 5-cleft, revolute: filaments hairy: receptacle 10-toothed; (or with a 10-pointed nectary:) capsule 5-celled, invested with the inner berry-like calyx. 18. 51—(spicy wintergreen.) *S.*

VACCINIUM. Calyx superior, 5-toothed or 5-parted: corol bell or pitcher-form, 5-cleft, the divisions reflected: filaments inserted on the germ with the corol: berry 4 or 5-celled, many-seeded. (The foreign species are sometimes octandrous.) 18. 51—(whortleberry.) *S.*

ANDROMEDA. LYONIA. Calyx 5-parted or 5-toothed, inferior: corol ovate,

roundish, or sub-cylindric, with a 5-cleft reflexed mouth: capsule 5-celled, 5-valved, with partitions contrary. (Stamens sometimes 8.) 18. 51—(white-bush, leather-leaf.) *S.*

KALMIA. Calyx 5-parted: corol wheel-salver-form, with 10 horns beneath and 10 cavities within, containing the anthers until the pollen is mature: capsule 5-celled, many-seeded. 18. 50—(laurel.) *S.*

RHODODENDRON. Calyx 5-parted. corol 5-cleft, somewhat funnel-form and oblique: stamens declining; varying from 5 to 10; anthers opening by 2 terminal pores: capsules 5-celled, 5-valved, opening at the top. 18. 50—(rose-bay.) *S.*

D. *Flowers without a calyx; (or with a coloured petal-like one,) whole plant destitute of green herbage.*

MONOTROPA. Corol confusedly polypetalous, permanent: petals about 5, with nectariferous hollows at their bases: anthers reniform, sub-peltate, 1-celled, giving out pollen by 2 holes near the middle: stigma orbicular, not bearded: capsule 5-celled, 5-valved. 18. 51—(birds' nest.) *S.*

HYPOPITHIS. Corol confusedly polypetalous, permanent: inner 4 or 5 petals with nectariferous hollows at their bases: outer ones without the hollows: anthers sub-peltate, 1-celled, opening their whole length: stigma orbicular, with a bearded margin: capsule 5-celled, 5-valved. 18. 51—(false beech-drops.)

PTEROSPORA. Corol 5-parted: nectary ovate, with a 5-toothed reflexed margin, enclosing the stamens: anthers 2-celled, 2-bristled, sub-peltate; filaments flat: style short: stigma capitate: capsule sub-globose, 5-celled. The nectary is considered as a corol, and the corol as a calyx, by some. But these three genera should be united in one, by altering two or three words in the definition. 18. 51—(albany beech-drops.)

Southern.

MONOTROPSIS. Corol 5-leaved, withering, ovate-acuminate, close-pressed to the nectary: nectary bell-form, fleshy; limb with 5 ovate-acute divisions: anthers clavate, bag-like: germ 4 or 5-sided: stigma sub-globose. 18. 51—(carolina beech-drops.)

ORDER II. DIGYNIA.

HYDRANGEA. Calyx 5-toothed, superior: corol 5-petalled: capsule 2-celled, 2-beaked, dehiscent between the beaks. 13. 84—(hydrangea.) Vid. Hortensia. *S.*

SAXIFRAGA. Calyx 5-parted, mostly half superior: corol 5-petalled: capsule 2-celled, 2-beaked, opening between the beaks; many-seeded. 13. 84—(saxifrage.) *S.*

TIARELLA. Calyx 5-parted, permanent: corol inserted on the calyx, 5-petalled; petals entire, with claws: capsule 1-celled, 2-valved, one valve larger. Sometimes the petals are more or less toothed. 13. 84—(mitre-wort.) *S.*

MITELLA. Calyx 5-cleft, permanent: petals 5 on the calyx, pinnatifid: capsule 1 celled, 2-valved, valves equal. 13 84—(false sanicle currant leaf.)

SAPONARIA. Calyx inferior, 1-leafed, tubular, 5-toothed, without scales: petals 5, with claws: capsule oblong, 1-celled. 22. 82—(soap-wort.) *S.*

DIANTHUS. Calyx inferior, cylindrical, 1-leafed, with 4 or 8 scales at the base: petals 5, with claws: capsule cylindrical, 1-celled, dehiscent at the top. 22. 82—(pink, sweet-william.)

SCLERANTHUS. Calyx inferior, 1-leafed, 5-cleft: corol 0: seeds 1 or 2, enclosed in the calyx: stamens inserted on the calyx. 22. 86—(knawell.)

ORDER III. TRIGYNIA.

CUCUBALUS. Calyx inferior, 1-leafed, bell-form, inflated: petals 5, with claws, not much appendaged at the mouth: capsule 3-celled. 22. 82—(bladder-campion.) *S.*

SILENE. Calyx 1-leafed, 5-toothed, inferior, cylindric, prismatic or conic: petals 5, with claws, appendaged at the mouth: capsule imperfectly 3-celled, 6-toothed, many-seeded. 22. 82—(catch-fly.) *S.*

STELLARIA. Calyx 5-leaved, inferior, spreading: petals 5, deeply cleft, mostly to the claw, spreading: capsule ovate, 1-celled, many-seeded, 6-toothed at the top. 22. 82—(starwort.) *S.*

ARENARIA. Calyx inferior, spreading, 5 leaved: petals 5, entire: capsule 1-celled, many-seeded. 22. 82—(sandwort.) *S.*

Exotic.

HORTENSIA. Flowers deformed: florets solitary: calyx 5-toothed, minute: corol 5-petalled: the gay flowers composing the cyme have a large coloured, permanent, petal-like, 5-leaved calyx, and a minute caducous, 4 or 5-petalled corol: stamens 8, 10 or 11. 13. 84—(changeable hydrangea.)

ORDER IV. TETRAGYNIA.

MICROPETALUM. SPERGULASTRUM. Calyx 5-leaved, expanding: petals 5, minute, entire, often wanting: stigmas 4, sessile: capsule ovate, longer than the calyx, 4-valved. 22. 82—(blind starwort.) *S.*

ORDER V. PENTAGYNIA.

SPERGULA. Calyx 5-leaved, inferior: petals 5, entire: capsule ovate, 1-celled, 5-valved: (stamens often 5.) 22. 82—(spurry.) *S.*

CERASTIUM. Calyx 5-leaved: petals 5, 2-cleft, or emarginate: capsule 1-celled, dehiscent at top, 10-toothed. 22. 82—(mouse-ear chick-weed.) *S.*

AGROSTEMMA. Calyx 5-cleft, prismatic or tubular; coriaceous: petals 5, with claws; border obtuse, entire: capsule 1-celled, many-seeded, opening with 5 teeth. 22. 82—(cockle.) *S.*

OXALIS. Calyx permanent, 5-parted or 5-leaved, inferior: petals 5, cohering by the claws: capsule 5-celled, 5-cornered, dehiscent at the corners: seeds 2 or more in a cell, covered with an elastic aril: stamens with 5 shorter, outer ones adhering at their bases. This genus and the Linum might be removed to the class Monadelphia. 14. 73—(wood sorrel.) *S.*

PENTHORUM. Calyx 5 to 10-cleft: petals 5 or 0: capsule 5-cuspidate, 5-celled; cells divided transversely, many-seeded. 13. 83—(virginian orpine.) *S.*

SEDUM Calyx inferior, 5-cleft: petals 5: 5 nectariferous scales at the base of the germ: capsules 5. 13. 83—(live-forever, or orpine, stonecrop.)

Exotic.

LYCHNIS. Calyx 1-leaved, oblong, 5-toothed: petals 5, with claws: the limb somewhat 2-cleft: capsule 1 or 5-celled, with a 5-toothed opening. 22. 82—(campion.)

ORDER X. DECAGYNIA.

PHYTOLACCA. Calyx 0: corol 5-petalled or 5-cleft, calyx-like, inferior: berry 10-celled, 10-seeded. By some authors the calyx is called a corol. 54. 29—(poke-weed.) *S.*

CLASS XI. ICOSANDRIA.*

ORDER I. MONOGYNIA.

CACTUS. Calyx superior, many-cleft, imbricate: petals numerous, in many series, the inner ones larger: stigma many-cleft; berry 1-celled, many-seeded, umbilicate. 13. 85—(prickly pear.) *S.*

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* Darlington proposes CALYCANDRA (calyx-stamens) as a substitute; and to extend the class to all stamen-bearing calyxes.

Prunus. Calyx 5-cleft, inferior, bell-form: corol 5-petalled; nut of the drupe smooth, with prominent seams at the sutures. 36. 92—(cherry, plum.) *S.*

Lythrum. Calyx bell-tubular, 6, 8, 10 or 12-toothed, inferior: petals 5 or 6, equal, on the calyx: capsule 2 to 4-celled, many-seeded, covered. 17. 91—(milk willow-herb.) A genus. Decodon, has been taken from this. It is founded on the cells of the capsule being always more than 2, and the teeth of the calyx being always 10, and of a peculiar form. Elliot places the species *verticillatum* under it. *S.*

Cuphea. Calyx tubular-ventricose, 6 to 12-toothed, unequal: petals 6, mostly unequal, inserted on the calyx: capsule 1-celled, dehiscent, longitudinally with the calyx, follicle-like, 3-sided: seeds lenticular. 54. 91—(wax-bush.) *S.*

Exotic.

Myrtus. Calyx superior, 5-cleft: petals 5: berry 2 or 3-celled, many-seeded. 19. 89—(myrtle.)

Amygdalus. Calyx 5-cleft, inferior: petals 5: drupe with a nut, perforated with pores: flowers sessile. 36. 92—(peach.)

Armeniaca. Flowers sessile: calyx 5-cleft, inferior: petals 5: drupe fleshy, pubescent: nut with one margin acute and the other obtuse, furrowed both sides. 36. 92—(apricot.)

Punica. Calyx 5-cleft, superior: petals 5: pome or berry many-celled, many-seeded: receptacle parietal: seed berried. 36. 92—(pomegranate.)

Southern.

Mentzelia. Calyx 5-cleft, superior, caducous: petals 5: capsule 1-celled, 3-valved, cylindric, 3 to 6-seeded: top flat: seeds oblong, somewhat angular, arranged longitudinally. 17 88.

Decumaria. Calyx superior, 8 to 10-cleft: petals 8 to 10: capsule 7 to 9-celled, many-seeded: seeds subulate, minute. 19. 39.

Philadelphus. Calyx 4-5-parted, superior, top-form: corol 4 or 5-petalled: style 4-cleft: capsule 4-5-celled, many-seeded; seed arilled. 19. 89—(false syringa, or mock orange.)

Chrysobalanus. Calyx 5-cleft, inferior: petals 5: style lateral: drupe prune-form; nut 5-grooved, 5-valved, 1-seeded. 36. 92.

Tigarea. Calyx inferior, 5-cleft: petals 5: capsule 1-seeded, oblong, acuminate, pubescent, opening longitudinally within. 36. 92.

* Lythum.

Order II. Digynia, to Order V. Pentagynia; or Di-pentagynia.

Agrimonia. Calyx inferior, 5-cleft or 5-toothed, invested with an outer lobed one: petals 5: stamens 12: seeds 2, in the bottom of the calyx. 35. 92—(agrimony.) *S.*

Cratægus. Calyx superior, 5-cleft: petals 5: styles 1 to 5: berry mealy: seeds 2 to 5, bony. 36. 92—(thorn-bush.) *S.*

Sorbus. Calyx 5-cleft, superior: petals 5: styles 2 to 3: berry pomaceous or farinaceous: seeds 2 or 3, cartilaginous. 36. 92—(mountain ash.) *S.*

Fothergilla. Calyx inferior, truncate, obsoletely crenate: corol 0: germ 2-cleft: styles 2: capsule 2-lobed, 2-celled: seeds solitary, bony. 50. 99—(witch-alder.) *S.*

Sesuvium. Calyx superior, 5-parted, coloured: corol none: capsule ovate, 3-celled, opening transversely, many-seeded. *S.*

Aronia. Calyx superior, 5-toothed: petals 5: fruit pomaceous: berry 5 or 10-celled; cells 1 or 2-seeded; seeds cartilaginous. 36. 92—(shad-flower, choak-berry.) *S.*

Pyrus. Calyx 5-cleft, superior: corol 5-petalled: pome 5-celled, many-seeded; seed compressed-ovate. 36. 92—(pear, apple, quince.) *S.*

Spiræa. Calyx 5-cleft, inferior, spreading: corol 5-petalled; petals equal.

roundish: stamens numerous, exsert: capsules 3 to 12, 2-valved within, each 1 to 3-seeded. 36. 92—(steeple-bush, hard-hack.) *S*

Gillenia. Calyx bell-tubular; border 5-toothed: corol partly unequal; petals 5, lanceolate, tapering at the claws: stamens included: styles 5, contiguous: stigmas capitate: capsules 5, connate at the base, opening on the inner side, each 2-seeded. 36. 92—(indian physic.) *S*.

Exotic.

Mespilus. Calyx 5-cleft, superior; divisions generally foliaceous, serrate: corol 5-petalled: styles 2-5: drupe or berry with from 2 to 5 bony seeds. 36. 92—(medlar.)

Mesembryanthemum. Calyx superior, 5-cleft: petals numerous, linear, cohering at the base: capsule fleshy, many-seeded, turbinate. 13. 87—(ice-plant.)

Order XIII. Polygynia.

Rosa. Calyx urn-form, inferior, 5-cleft, fleshy; contracted towards the top: petals 5: seeds numerous, bristly, fixed to the sides of the calyx within. A genus remarkable for the multiplication of its petals, by rich culture. 35. 92—(rose.) *S*.

Rubus. Calyx 5-cleft, inferior: corol 5-petalled: pistils numerous: berry composed of many juicy, 1-seeded acines, on a dry receptacle. 35. 92—(raspberry, blackberry.) *S*.

Dalibarda. Calyx 5-cleft, (3-cleft?) inferior: corol 5-petalled: styles long, caducous, 5 to 8; berry composed of dry granulations. 35. 92—(dry strawberry.) *S*.

Dryas Calyx 8 or 10-cleft, segments equal: seeds 5 to 8, with long plumose awns. 35. 92.

Geum. Calyx inferior, 10-cleft, 5 alternate divisions smaller: corol 5-petalled: seeds with a bent awn: receptacle columnar, villous. 35. 92—(avens, or herb bennet.) *S*.

Bootia. Calyx inferior, 10-cleft, 5 alternate divisions lanceolate, having at the base of the germ against them 5 nectariferous pits: corol 5-petalled: seeds awnless, affixed to a juiceless receptacle 35. 92—(false avens.) *S*.

Potentilla. Calyx flat, inferior, 10-cleft; 5 alternate divisions smaller: corol 5-petalled: petals roundish or obovate: seeds awnless, roundish, rugose, fixed to a dry small receptacle. 35. 92—(five-finger, cinquefoil.) *S*.

Comarum. Calyx inferior, 10-cleft: 5 alternate divisions smaller: petals 5, lanceolate, acuminate, half as long as the calyx: receptacle ovate, spongy, permanent, villous. 35. 92—(marsh five-finger.) The habit of this genus differs sufficiently from the Potentilla. *S*.

Fragaria. Calyx inferior, 10-cleft; 5 alternate divisions smaller: corol 5-petalled: receptacle ovate, berry-like: acines naked, immersed in the receptacle, caducous. 35 92—(strawberry.) *S*.

Calycanthus. Calyx 1-leafed, pitcher-shaped, scaly, with coloured petal-like divisions: corol none. styles many, with glandular stigmas: seeds many in the succulent calyx. 35. 92—(carolina allspice.) *S*.

CLASS XII. POLYANDRIA.

Order I. Monogynia.

Tilia. Calyx 5 or 6-parted, inferior, caducous: corol 5 or 6-petalled: capsule 5 or 6-celled, globular, coriaceous, dehiscent at the base; 1-seeded. Often 4 of the cells are empty. 37. 79—(bass wood.) *S*.

Cistus. Helianthemum. Calyx 5-leaved, superior, 2 of them smaller: corol 5-petalled: capsule 1-celled, 3-valved, opening at the top; partitions contrary: seeds angular. 20. 80—(rock-rose, frost-plant.) *S*.

Hudsonia. Calyx tubular, inferior, unequally 5-parted; two of the divi-

sions obsolete, coloured : corol 5-petalled ; stamens 15 to 30 : capsule 1-celled, 3-valved, 1 to 3-seeded. 18. 80—(false heath.)

Portulacca. Calyx 2-cleft, inferior : corol 5-petalled : capsule 1-celled, opening transversely : columella 5, filiform. 13. 86—(purslane.) *S.*

Talinum. Calyx inferior, 2 or 5-leaved : corol 5-petalled : capsule 1-celled, 3-valved, many-seeded : seeds arillate : columella globose—(taliny.) *S.*

Chelidonium. Calyx 2-leaved, caducous : corol 4-petalled : silique-like capsule 1-celled, 2-valved, linear : seeds crested, many. 27. 62—(celandine.) *S.*

Glaucium. Calyx 2-leaved, caducous : corol 4-petalled : capsule 1-celled, linear : seeds many, punctate. 27. 62.

Meconopsis. Calyx 2-leaved, caducous : corol 4-petalled : style distinct ; stigma 4 to 6-rayed : capsule oblong, generally prickly, 1-celled, 4 to 6-valved ; columella slender. 27. 62. *S.*

Argemone. Calyx 3-leaved, caducous : corol 4 to 6-petalled : stigma sessile, capitate, 4 to 7 lobed : capsule ovate, angular. 1-celled, opening at the top by valves ; columella linear : seeds spherical, pitted. 27. 62—(horned poppy.) *S.*

Sanguinaria. Calyx caducous, 2-leaved : corol about 8-petalled : stigma sessile, twinned, 2-grooved : capsule pod-like, ovate, 1-celled, 2-valved, acute at each end ; valves caducous : columella 2, permanent. 27. 62—(bloodroot.) *S.*

Podophyllum. Calyx 3-leaved, minute : corol about 9-petalled : stigma large, crenate, sessile : berry 1-celled, crowned with the stigma, large, many-seeded : columella one-sided. 27. 61—(wild mandrake.) *S*

Actaea. Calyx inferior, 4-leaved, caducous : corol 4-petalled : stigma sessile, capitate : berry 1-celled : seeds many, half orbicular. 26. 61—(necklace weed, bane-berry.) *S.*

Macrotis. Actea ? Cimicifuga ? Calyx about 4-leaved, becoming coloured before expanding, caducous : corol many minute petals, very caducous, or wanting : stigma simple, sessile, curving towards the gibbous side of the germ : capsule 2-valved, dehiscent at its strait suture.* 26. 61—(cohosh, black snake-root, bug-bane.) *S.*

Sarracenia. Calyx double, permanent, 3 and 5-leaved : corol 5-petalled, caducous : stigma peltate, permanent, very large, covering the stamens : capsule 5-celled, 5-valved, many-seeded. 54. 62—(side-saddle flower.) *S.*

Nuphar. Calyx 5 or 6-leaved : petals many, minute, inserted on the receptacle with the stamens, nectariferous on their backs : stigma with a broad disk, and radiate furrows, sessile : pericarp berry-like, many-celled, many-seeded. 13. 62—(water lily, or yellow pond-lily.) *S*

Nymphaea. Calyx 4 to 7-leaved : corol many-petalled, petals about equalling the length of the calyx leaves, attached to the germ beneath the stamens : stigma a broad disk, marked with radiated lines : pericarp berry-like, many-celled, many-seeded. 13. 62—(pond-lily.)

Exotic.

Papaver. Calyx 2-leaved, caducous : corol 4-petalled : stigma a broad disk, with radiating lines : capsule 1-celled, dehiscent by pores under the permanent stigma. 27. 62—(popy.)

Thea. Calyx 5 or 6-leaved : corol 6 or 9-petalled : capsule 3-seeded. 54. 71—(tea.)

Citrus. Calyx 5-cleft : petals 5, oblong : filaments dilated at the base, in several parcels : berry 9 to 18-celled—Polyadelphous. 18. 70—(orange, lemon.)

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* I see no good reason for changing this name to Botrophis, according to Rafinesque. Our plant does not agree with the description of Actea or Cimicifuga.

Southern.

Bejaria. Befaria. Calyx 7-cleft : petals 7 : stamens 14 : capsule 7-celled, many-seeded. 18. 50.

Lewisia. Calyx 7 to 9-leaved : petals 14 to 18 : stamens 14 to 18 : style about 3-cleft : stigmas 2-cleft : capsule 3-celled, many-seeded ; seeds shining. 13. 83.

* Jeffersonia, Taxus.

Order II. Digynia, to Order V. Pentagynia : or Di-pentagynia.

Delphinium. Calyx 0 : corol 5-petalled, unequal : nectary 2-cleft, horned behind : capsules 1 or 3, pod-like. By some the corol is considered as a coloured calyx. 26. 61—(larkspur.) *S.*

Aconitum. Calyx 0 : petals 5, upper one vaulted : nectaries 2, hooded, peduncled, recurved : capsule 3 or 5, pod-like. By some the corol is considered as a coloured calyx.) 26. 61—monk's hood.) *S.*

Aquilegia. Calyx 0 : petals 5, caducous : nectaries 5, alternating with the petals, and terminating downwards in a spur-like nectary : capsules 5, erect ; acuminated with the permanent styles, many-seeded. By some the nectaries are considered as petals and the corol as a coloured calyx. 26. 61—(columbine.) *S.*

Ascyrum. Calyx 4-leaved ; 2 interior leafets cordate, larger : corol 4-petalled : stamens with the filaments disposed in 4-parcels : styles 1 to 3 : capsule oblong, 1-celled, 2-valved, included in the calyx leaves. 20. 68—(st. peter's wort.) *S.*

Hypericum. Calyx 5-parted ; divisions equal, subovate : corol 5-petalled : filaments often united at the base in 3 or 5 sets : styles 2 to 5 : capsule membranaceous, roundish, with a number of cells equal to the number of styles. The bases of the filaments are often in groups, when they are not united. 20. 68. (st. john's wort.) *S.*

Exotic.

Nigella. Calyx none ; petals 5 : nectaries 5 ; three-cleft, within the corol : capsules 5, convex. 26. 61—(fennel-flower.)

Paeonia. Calyx 5-leaved : petals 5 : styles 0 : stigmas 2 or 3 : capsules pod-like, many-seeded. Remarkable for the multiplication of petals by rich culture. 26. 61—(peony.)

* Fothergillia, Juglans, Myriophyllum.

Order XIII. Polygynia.

A *Perianth none.*

Hydrastis. Petals 3, ovate (by some considered a coloured calyx :) berry composed of 1-seeded acines. 26. 61—(orange-root.) *S.*

Clematis. Petals 3, 4, 5 or 6 : seeds compressed : styles permanent, becoming long plumose tails. (Some species are dioecious.) 26. 61—(virgin's bower.) By some the corol is considered a coloured calyx. *S.*

Atragene. Clematis. Corol double, many petalled ; outer ones largest, inner ones nectary-like, spatulate : seeds with pilose (or plumose) tails : (or petals 4 to 6, with spatulate nectaries alternating with the petals ; and the outer filaments dilated.) 26. 61—(false virgin's bower.) *S.*

Thalictrum. Petals 4 or 5 : filaments very long : seeds without tails, striate, terete. (Some species are dioecious.) 26. 61—(meadow rue.) The corol is considered a coloured calyx by some. *S.*

Anemone. Petals 5 to 9 : seeds numerous, naked. 26. 61—(wind-flower, rue anemone.) The corol is considered a calyx by some. *S.*

Trollius. Petals 5 to 15, caducous : nectaries 5 to 20, small, tubular at the base, linear : capsules numerous, ovate, sessile, many seeded. 26. 61—(globe flower.) By some the nectaries are considered corols, and the corols calyxes.

Coptis. Petals 5 or 6, caducous: nectaries small, 5 or 6, cowled: capsules oblong, 5 to 8, stiped, stellate, beaked, many-seeded. 26. 61—(gold thread.) By some the nectaries are mistaken for corols, and the corols for calyxes.

Caltha. Petals 5 to 9, orbicular: capsules numerous, (5 to 10) many-seeded, compressed; 1-celled, spreading: nectaries 0: (pistils variable in number.) 26. 61—(american cowslip.) *S.* By some the corol is mistaken for a coloured calyx.

Exotic.

Helleborus. Petals 5 or more: nectary 2-lipped, tubular: capsules 5 or 6; many-seeded, erectish, compressed. 26. 61—(hellebore.)

B. *Having a perianth.*

Magnolia. Calyx 3-leaved: corol 6 to 9-petalled: capsules numerous, imbricate on a strobile-like spike, 2-valved: seeds arilled, pendulous on long cords; berry-like. 52. 75—(magnolia, or beaver-tree.) *S.*

Liriodendron. Calyx 3-leaved: corol 6 or 9-petalled, liliaceous: seeds in a sub-lanceolate samara, imbricate on a strobile-like spike. 52. 75—(tulip tree, or whitewood.) *S.*

Porcelia. Asimina. Calyx 3-leaved or 3-parted: petals 6, spreading, oblong-ovate; the inner ones largest: anthers sub-sessile: stigmas sessile, obtuse: berries several, sessile, ovate, obtuse, many seeded; seed arilled. 52. 76—(custard apple.) *S.*

Hepatica. Calyx 3-leaved, a little distance below the corol, entire: petals 6 to 9: seeds without tails. 26. 61—(liverleaf.) *S.*

Ranunculus. Calyx 5-leaved: petals 5, with claws, and a nectariferous pore or scale on the inside of each: seeds without tails, naked, numerous. 26. 61—(crow-foot.) Some mistake an extra tegument for a capsule. *S.*

Hydropeltis. Brasenia. Calyx 6-leaved, somewhat converging; 3 or 4 inner leaves longest: corol 0: stamens equalling the length of the calyx: capsules oblong, somewhat fleshy, numerous, 2-celled, 1 or 2-seeded. The inner leaves of the calyx are considered as petals. 26. 61—(water-shield.) *S.*

Nelumbium. Cyamus. Calyx 4 or 5-leaved: petals 5 or more: nuts half immersed in a truncate obconic, very large, receptacle, and crowned with the permanent style. 26. 61—(nelumbo.) *S.*

Exotic.

Sempervivum. Calyx 9 to 12-parted: petals 8 to 12: capsules 12, many-seeded; (stamens 16 or 20.) 13. 83—(house-leek.)

Adonis. Calyx 4-5-leaved: petals 5 or more, without nectariferous pores: seeds awnless. 26. 61—(pheasant's eye.)

Southern.

Illicium. Calyx 6-leaved: petals 27, in three series: capsules many, disposed in a circle, 2-valved, 1-seeded. Sometimes 6-petalled. 12. 27—(anise tree.)

* Zostera.

CLASS XIII. DIDYNAMIA.

Order I. Gymnospermia.

A. *Calyx 5-cleft, with the divisions, or teeth, nearly equal.*

Teucrium. Corol deep-cleft on the upper side, and without an upper lip: lower lip 3-cleft, the middle division rounded: stamens and pistils incurved; stamens exsert through the cleavage on the upper side of the corol. 42. 39—(wood sage, wild germander.) *S.*

Mentha. Corol nearly equal, 4-lobed; broadest division emarginate: stamens erect, distant. 42. 39—(spearmint, peppermint.) *S.*

Isanthus. Calyx somewhat bell-form: corol 5-parted; tube strait, narrow; divisions ovate equal: stamens nearly equal: stigma linear, recurved. 42. 39—(blue gentian.)

Hedeoma. Calyx 2-lipped, gibbose at the base; upper lip with 3 lanceolate teeth; lower lip with 2 subulate ones: corol ringent: 2 short stamens barren. 42. 39—(pennyroyal.) *S.*

Cunila. Calyx cylindric, 10-striate, 5-toothed, throat villose: corol ringent: upper lip erect, flat, emarginate: 2 of the stamens usually barren and very short; the other two exsert: stigma unequally bifid. 42. 39—(dittany.)

Hyssopus. Corol with the under lip 3-parted, its intermediate divisions subcrenate: stamens strait, distant. 42. 39—(hyssop.) *S.*

Nepeta. Calyx dry, striate: corol with a longish tube; under lip with the middle division crenate: throat with a reflected margin: stamens approximate. 42. 39—(catmint.) *S.*

Lamium. Segments of the calyx subulate, spreading: corol with the upper lip entire, vaulted; under lip 2-lobed; throat with a tooth at each margin. 42. 39—(dead nettle.) *S.*

Galeopsis. Calyx awned: corol with the upper lip sub-crenate, vaulted; lower lip unequally 3-lobed, having 2 teeth on its upper side near the margin of the orifice, and opposite to the sinuses dividing the lobes. 42. 39—(flowering nettle.)

Stachys. Calyx with its divisions awned: corol with the upper lip vaulted; the lower lip 3-lobed; the middle divisions largest, emarginate; the lateral divisions reflexed: stamens reflexed towards the sides after discharging the pollen. 42. 39—(wound-wort, hedge nettle.) *S.*

Leonurus. Calyx 5-angled, 5-toothed: corol with the upper lip erect, villose, flat, entire; lower lip 3-parted; middle division undivided: lobes of the anthers parallel, having shining dots. 42. 39—(mother-wort.) *S.*

Verbena. Calyx with one of the teeth truncate: corol funnel-form, with a curved tube; border 5-cleft, nearly equal: seeds 2 or 4, with an extra vanishing tegument: sometimes 2 stamens are barren. 42. 39—(vervain.) *S.*

Marrubium. Calyx salver-form, rigid, marked with 10 lines: corol with the upper lip 2-cleft, linear, strait. 42. 39—(horehound.) *S.*

Glechoma. Calyx 5-cleft: corol double the length of the calyx; upper lip 2-cleft; lower lip 3-cleft, with the middle segment emarginate; each pair of anthers approaching so as to exhibit the form of a cross. 42. 39—(ground ivy, gill-overground.)

Pycnanthemum. Involucre bract-like, many-leaved; under small heads of flowers: calyx tubular, striate: corol with the upper lip sub-entire; lower lip 3-cleft; middle segment longer: stamens distant, nearly equal; cells of the anthers parallel. 42. 39—(mountain mint.) *S.*

Exotic.

Lavandula. Calyx ovate, sub-dentate; bracts under-studded: corol resupinate: stamens in the tube. 42. 39—(lavender.)

Ballota. Calyx salver-form, 5-toothed, 10-striate: corol with the upper lip concave, crenate: seed ovate, 3-sided. 42. 39—(false mother-wort.)

Satureja. Calyx tubular, striate: corol with divisions nearly equal: stamens distant. 42. 39—(savory.)

Molucella. Calyx very large, bell or shell-form; margin repand-spinose: corol much smaller, in the bottom of the calyx. 42. 39—(shell-flower, molucca balm.)

Southern.

Ajuga. Corol with the upper lip minute and 2-toothed: stamens longer than the upper lip; anthers all reniform, 1-celled. 42. 39.

Synandra. Calyx 4-cleft; segments unequal, subulate, inclined to one side: upper lip of the corol entire and vaulted; lower one unequally 3-lobed; throat inflated, naked: upper pair of anthers cohering, with the adjoining cells empty; filaments downy. 42. 39.

Leucas. Calyx 10-striate, 6 to 10-toothed: upper lip a bearded helmet, entire; lower one long, 3-cleft; middle segment largest; lobes of the anthers spreading: stigma shorter than the upper lip. 42. 39.

HYPTIS. Calyx 5-toothed: corol 2-lipped; upper lip 2-lobed, lower one 3-lobed, with the middle lobe calyx-like, involving the stamens and style until it becomes reflexed: stamens declined. 42. 39.

B. *Calyx 2-lipped.*

CLINOPODIUM. Involucre many-bristled, bract-like, under head-form whorls: perianth 2-lipped: corol with the upper lip flat, obcordate, strait. 42. 39—(field thyme.)

ORIGANUM. Calyxes collected into a 4-sided strobile-like cone, with broad intervening bracts: corol with the upper lip erect, flat, straight, emarginate: under lip 3-parted, divisions nearly equal. 42. 39—(marjoram.)

DRACOCEPHALUM. Calyx sub-equal, 5-cleft: corol with the throat inflated: the upper lip concave, the middle division of the lower lip roundish, notched, stamens unconnected. 40. 40—(dragon-head.) *S.*

PRUNELLA. Calyx with the upper lip dilated: filaments 2-forked, with an anther on one of the points: stigma 2-cleft 42. 39—(self-heal, or heal-all.) *S.*

SCUTELLARIA. Calyx with an entire mouth, which is closed with a helmet-form lid after the corol falls out: tube of the corol bent. 42. 39—(scull-cap.) *S.*

TRICHOSTEMA. Calyx resupinate: corol with the upper lip falcate; the under lip 3-parted, with the middle division small, oblong: filaments very long-exsert, incurved or coiled. 42. 39—(blue-curls.) *S.*

PHRYMA.* Calyx cylindric, upper lip longer, 3-cleft; lower lip 2-toothed: corol with the upper lip emarginate; lower lip much larger: seed single. 42. 39.—(lopseed.) *S.*

Exotic.

THYMUS. Calyx sub-campanulate, with the throat closed with hairs: corol with the upper lip flat, emarginate; lower lip longer. 42. 39—(thyme.)

MELISSA. Calyx dry, flattish above, with the upper lip sub-fastigiate: corol with the upper lip somewhat vaulted, 2-cleft; lower lip with the middle lobe cordate. 42. 39—(balm.)

OCYMUM. Calyx with the upper lip orbiculate, the lower one 4-cleft: corol resupinate; one lip 4-cleft, the other undivided: outer filaments sending out a process from the base. 42. 39—(sweet basil.)

Southern.

MACBRIDEA. Calyx top-form, 3-cleft, 2 segments large: corol 2-lipped; the upper entire, the under 3-parted: anthers 2-lobed; the lobes spreading, fringed with small spines. 42. 39.

CALAMINTHA. Calyx closed with hairs after flowering: throat of the corol somewhat inflated; upper lip emarginate; lower one 3-parted, middle segment somewhat emarginate or entire. 42. 39.

CERANTHERA. Calyx 2-lipped, the upper lip emarginate, the lower one 2-cleft: upper lip of the corol 2-lobed, the lower one 3-parted: stamens exsert; anthers horizontal, awned at each end. 42. 39.

* Lycopus, Monarda, Salvia, Collinsonia.

ORDER II. ANGIOSPERMIA.

A. *Calyx 2-cleft or 2-leaved.*

OBOLARIA. Calyx bract-like: corol 4-cleft, bell-form: capsule 1-celled, 2-valved, many-seeded: stamens from the divisions of the corol nearly equal: stigma 2-cleft or emarginate. 40. 35—(penny-wort.) *S.*

CASTILLEJA. Calyx spathe-form, upper lip 2 cleft, lower one wanting: corol 2-lipped: lower one very short, 3-cleft, with 2 glands between the divisions: capsule 2-celled. 40. 35. *S.*

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* When the seed approaches maturity, the calyx closes upon it, which has induced some authors to remove it to the next order. But the Scutellaria presents nearly the same character. Other genera approach it also, in this particular. It is, in my opinion, an unnecessary innovation.

B. *Calyx 4-cleft.*

Schwalbea. Calyx tubular-inflated; upper division small; lower division large, emarginate or 2-toothed: corol ringent, upper lip entire, arched, lower lip 3-lobed: capsule ovate, compressed, 2-celled, 2-valved, with a double partition: seeds many, chaffy. 40. 40—(chaff-seed.) *S.*

Euchroma. Calyx inflated, 2 or 4-cleft: corol 2-lipped; upper lip long linear, embracing the style and stamens: anthers linear, with unequal lobes, cohering so as to form an oblong disk: capsule ovate, compressed, 2-celled: seeds numerous, surrounded with an inflated membrane. 40. 40. *S.*

Bartsia. Euchroma? Calyx lobed, emarginate, coloured: corol less than calyx; upper lip longest, concave, entire; lower lip 3-cleft and reflexed: anthers with equal lobes, not cohering: capsule 2-celled: seed angled. 40. 35—(painted cup.)

Rhinanthus. Calyx inflated: corol ringent; the upper lip mostly compressed; the under lip spread, 3-parted: capsule 2-celled obtuse, compressed. 40. 35—(yellow coxcomb.)

Melampyrum. Corol with the upper lip compressed, the margin folded back; lower lip grooved, 3-cleft, sub-equal: capsule 2-celled, oblique, dehiscent on one side: seeds 2, cylindric, gibbous, cartilaginous and smooth. 40. 35—(cow-wheat.) *S.*

Southern.

Lantana. Flowers in a head: calyx obsoletely 4-toothed: border of the corol 4-lobed, unequal, throat open: stamens within the tube: stigma hooked: drupes aggregated, nut 2-celled, even, 2-seeded. 40. 35.

Euphrasia. Calyx cylindric: corol 2-lipped; the upper lip 2-cleft; lower lip 3-lobed, with the divisions 2-cleft: lower anthers lobed, spinose. 40. 35—(eye-bright.)

Orthocarpus. Calyx tubular, somewhat 4-cleft: corol 2 lipped, closed; upper lip smaller, compressed; margin inflexed; lower lip concave, obsoletely 3-toothed, unexpanded: lobes of anthers unequal, spreading: capsule straight-ovate, 2-celled, 2-valved, many-seeded. 40 35.

C. *Calyx 4 or 5-cleft, or 5-toothed; plant without green herbage.*

Orobanche. Calyx 4 or 5-cleft; segments often unequal: corol ringent: capsule ovate, acute, 1-celled, 2-valved: seeds numerous: a gland beneath the base of the germ. 40. 35—(broom rape.) *S.*

Epiphegus. Polygamous. Calyx abbreviated, 5-toothed: corol of the barren flowers ringent, compressed, 4-cleft: lower lip flat; of the fertil flowers minute, 4-toothed, caducous: capsule truncate, oblique, 1-celled, imperfectly two-valved, opening on one side. 40. 35—(beech drops, cancer root.)

D. *Calyx 5-leaved or 5-cleft: plant with green herbage.*

Zapania. Flowers capitate: calyx 5-toothed: corol 5-lobed; stigma head-peltate, obliqu: pericarp bladder-like, vanishing, connecting the two seeds. 40. 40—(fog-fruit.) *S*

Herpestris. Calyx unequal, 2-bracted at the base: corol tubular, somewhat 2-lipped: stamens included: capsule 2-valved, 2-celled; partitions parallel with the valves. 40. 40. *S.*

Limosella. Calyx 5-cleft: corol 4 or 5-lobed, equal; stamens approaching each other by pairs: capsule 1 or 2-celled, 2-valved, many-seeded. 40. 40—(mudwort.)

Scrophularia. Calyx 5-cleft: corol sub-globose, resupinate; lips short, middle division of lower lip reflexed: capsule 2-celled. (Generally a stamen-like organ is attached to the corol.)—Corol dull purplish, green, or brown. 40. 40—(figwort.) *S.*

Bignonia. Calyx 5-toothed, cup-form, sub-coriaceous: corol bell-form, 5-lobed, ventricose beneath: capsule silique-like, 2-celled: seed membrane-winged. 40. 45—(trumpet-flower.) *S.*

Ruellia. Calyx 5-parted, often 2-bracted : corol somewhat bell-form, limb 5-lobed : stamens approaching by pairs : capsule tapering to both ends, toothed, elastically dehiscent : seeds few. 40. 35—(ruel.) *S.*

Buchnera. Calyx 5-toothed : corol with a slender tube, and the limb in 5 equal divisions, the lobes cordate : capsule 2-celled. 40. 35—(blue hearts.) *S.*

Antirrhinum. Calyx 5-leaved or deeply 5-parted ; the two lower divisions remote ; corol personate or ringent, spurred, or with a prominent base ; the throat closed with a prominent palate : capsule ovate, 2-valved, dehiscent at the apex, with reflexed teeth. 40. 40—(snapdragon, toad-flax.) *S.*

Collinsia. Calyx 5-cleft : corol 2-lipped, throat closed : upper lip 2-cleft : lower one 3-cleft : intermediate segment keeled, bag-like, and covering the declined stamens and style : capsule globose, somewhat 1-celled and 4-valved. Seeds 2 or 3, umbilicate. 40. 40.

Gerardia. Calyx 5-cleft or 5-toothed : corol sub-campanulate, unequally 5-lobed ; segments mostly rounded : capsule 2-celled, dehiscent at the top. 40. 40—(false-foxglove.) *S.*

Pedicularis. Calyx ventricose, 5-cleft or obliquely truncate : corol ringent ; upper lip arched, emarginate and compressed : capsule 2-celled, mucronate, oblique : seeds numerous, angular, coated. (Leaves many-cleft.) 40. 35—(lousewort, high heal-all.) *S.*

Mimulus. Calyx prismatic, 5-toothed : corol ringent ; upper lip folded back upon its sides, lower lip with a prominent palate : stigma thick, 2-cleft : capsule 2-celled, many-seeded ; seeds minute. 40. 40—(monkey-flower.) *S.*

Chelone. Calyx 5-cleft or 5-leaved, 3-bracted : corol ringent, inflated : the upper lip emarginate-obtuse, under lip slightly 3-cleft ; the rudiment of a smooth filament between, and shorter than the two tallest stamens ; anthers woolly : capsule 2-celled, 2-valved : seeds with membranous margins. 40. 45—(snake-head.) *S.*

Pentstemon. Calyx 5-cleft or 5-leaved : corol ringent, inflated ; the rudiment of a bearded filament between, and longer than, the two tallest stamens : anthers smooth : capsule 2-celled, 2-valved, ovate ; seeds numerous, angular. (Taken from the last genus.) 40. 45—(beard tongue.) *S.*

Martynia. Calyx 5-cleft : corol ringent, almost bell-form : capsule woody and barked, with a hooked beak, 4-celled, 2-valved. 40. 45—(unicorn-plant.) *S.*

Exotic.

Digitalis. Calyx 5-parted : corol bell-form, ventricose, 5-cleft : stigma simple or bilamellate : capsule ovate, 2-celled.—(Flowers racemed.) 40. 40—(foxglove.)

Southern.

Capraria. Calyx 5-parted : corol somewhat bell-form, 5-cleft, nearly equal capsule 2-valved, 2-celled, many-seeded. 40. 45.

Seymeria. Afzelia. Calyx 5-parted nearly to the base : corol bell-wheel-form, almost equally 5-lobed : stamens sub-equal, near the throat : anthers oblong, naked : style declined : capsule inflated, ovate, acute, 2-celled, 2-valved, opening at the top. 40. 40.

Sesamum. Calyx 5-parted : corol bell-form, 5-cleft, with the lower lobe largest : stamens with the rudiment of a fifth : stigma lanceolate : capsule obtusely 4-angled, 4-celled. 40. 45—(oily grain.)

* Catalpa, Gratiola.

CLASS XIV. TETRADYNAMIA.

Order I. Siliculosa.

Bunias. Cakile. Flower minute. Silicle sub-lanceolate, 4-angled, with two separable, 1-seeded, valveless articulations ; lower one with a depressed line, upper one furnished with an emarginate tooth on each side, and an elevated line ; seed erect in the upper joint, and pendulous or abortive in the lower one. 39. 63—(sea-rocket.) *S.*

Thlaspi. Calyx spreading, equal at the base: filaments distinct, without teeth: silicle compressed, emarginate, obcordate, many-seeded; valves resemble two boats with the keels outward. 39. 63—(shepherd's purse.) *S.*

Draba. Silicle oval-oblong, many-seeded; valves flattish, parallel to the partition; seeds not margined: filaments without teeth: style none Cotyledons accumbent.* 39. 63—(whitlow-grass.) *S.*

Alyssum. Vesicaria. Calyx equal at the base: petals entire: filaments of the two shorter stamens marked with a tooth: silicle entire, acuminate with the style, oval or globose, often hairy: seeds 2 to 4 in each cell, compressed or membranous-winged. Cotyledons accumbent. 39. 63—(madwort, gold-of-pleasure.)

Lepidium. Calyx spreading: corol regular: silicle emarginate, cordate or oval; cells 1-seeded; valves carinate, dehiscent; partition contrary. Cotyledons incumbent. 39. 63—(pepper-grass.) *S.*

Camelina. Silicle sub-ovate, many-seeded; valves thick, (glabrous or membranaceous in part:) stamens without teeth: styles rather long: seeds oblong, striate, not membrane-winged. Cotyledons incumbent. 39. 63.

Subularia. Silicle entire, ovate; valves ovate, concave, (convex without:) stigma sub-sessile: seed linear, 2-plaited. Cotyledons incumbent. 39. 63.

Cochlearia. Silicle thick, rugose, many-seeded, 2-valved; valves gibbous, obtuse: partition nearly parallel to the valves. 39. 63—(horse-radish, water-radish.)

Exotic.

Lunaria. Silicle entire, oval, flat-compressed, pedicelled; valves equalling the partition, parallel, flat: calyx consists of coloured sack-like leafets. 39. 63—(honesty, or satin-flower.)

Isatis. Silicle compressed, oblong, ligulate, valveless, 1-seeded: partition like lattice work. 39. 63.—(woad.)

Iberis. Corol irregular, the two exterior petals longest: silicle emarginate, many-seeded. 39. 63—(candy tuft.)

Southern.

Coronopus. Silicle reniform, compressed, wrinkled; cells valveless, 1-seeded. 39. 63.

Myagrum. Silicle sub-erose, valveless; cells fertile and empty, alternately superimposed on each other: styles permanent. 39. 63.

Selenia. Calyx equal at the base, coloured, spreading: silicle large, many-seeded, oval, flat-compressed, margined, sub-sessile; valves parallel, smaller than the partition: glands 10, in pairs. 39. 63.

Order II. Siliquosa.

Dentaria. Calyx longitudinally converging: silique lanceolate, bursting elastically, with flat, nerveless, revolute valves; the partition thick and fungus-like: stigma emarginate; seeds in a single series, ovate, not margined. Cotyledons accumbent. (Roots sharp-tasted, fleshy, with tooth-like processes.) 39. 63—(tooth-root, trickle-root.) *S.*

Cardamine. Calyx leaves spreading but little: stigma entire: a single gland between each of the short stamens and the calyx: silique with truncate margins, linear, long, bursting elastically with revolute valves, narrower, but equalling the length of the partitions: seed with a slender funicule, not margined. 39. 63—(american water-cress.) *S.*

Arabis. Glands 4, one within each leafet of the erect calyx, of the size of the reflected scale: silique compressed, torulose, sub-divaricate; valves flat, 1-nerv-

* In cases of doubt, the cotyledons may be examined after soaking the seed in warm water. When *accumbent* is applied, the corcle is against the back of one of the cotyledons. When *incumbent* is applied, the corcle is at the edges of the cotyledons. *Conduplicate* is applied, when the two cotyledons close together, like the shutting of a book. *Torrey.*

ed: seeds arranged in a single series. Cotyledons accumbent. 39. 63—(wall-cress.) *S.*

Turritis. Calyx converging, erect: corol erect; silique very long, striate, 2-edged; valves keeled or nerved; seeds arranged in a double series. Cotyledons accumbent. 39. 63—(tower-mustard.)

Barbarea. Calyx erect, equal at the base: glands between the bases of the short stamens and the germ: silique 4-edged: seeds arranged in a single series. Cotyledons accumbent. 39. 63—(water radish.)

Sisymbrium. Calyx mostly spreading, equal at the base: silique sub-terete. Cotyledons incumbent, sometimes oblique. flat. 39. 63—hedge-mustard.) *S.*

Erysimum. Nasturtium. Calyx and corol spreading: silique bursting, not elastically; beak short and terete; valves nerveless, not keeled, straitish, concave. Cotyledons accumbent. 39. 63—(english water-cress, water-radish.) *S.*

Cheiranthus. Calyx closed, two of the leafets gibbous at the base: petals dilated: silique, when young, with a glandular tooth each side: stigma 2-lobed: seed flat, sometimes margined. 39. 63—(stock-july-flower, wall-flower.) *S.*

Hesperis. Calyx closed, furrowed at the base, shorter than the claws of the petals: petals bent obliquely, linear or obovate: silique 4-sided, 2-edged, or sub-terete: seeds not margined: stigmas forked, with converging apexes. Cotyledons incumbent, flat. 39. 63—(rocket.)

Sinapis. Calyx spreading: corol with strait claws: glands between the short stamens and pistil, and between the long stamens and calyx: partition extending beyond the valves of the silique, ensiform: seeds in a single series. Cotyledons conduplicate. 39. 63—(mustard.)

Raphanus. Calyx closed, setose: silique torose, terete, not opening by valves, 1 or 2-celled: glands between the short stamens and pistil, and between the long stamens and calyx. Cotyledons conduplicate. 39. 63—(radish.)

Exotic.

Brassica. Calyx erect, converging: partition extending beyond the valves of the silique: seed globose: glands between the short stamens and pistil, and between the long stamens and calyx. 39. 63—(cabbage, turnip.)

Southern.

Stanleya. Calyx very large, 4-sided, cruciform, diverging, coloured: petals erect; claws longer than the lamina: stamens nearly equal; glands 4, 2 outside and 2 inside of the corol: silique stiped, 2-celled, 2-valved: seeds oblong, flattish. 39. 63.

Streptanthus. Calyx erect, coloured: petals dilated; having twisted, channelled, claws: glands none: stamens with filaments subulate, and thickened at the base: silique very long, angled, compressed: seeds in one series, flat, margined: cotyledons accumbent. 39. 63.

* Cleome, or Polanisia.

CLASS XV. MONADELPHIA.

Order III. Triandria.

Sisyrinchium. Spathe 2-leaved: perianth 0: corol superior, 6-cleft or 6-petalled, tubular: style 1: stigma 3-cleft: capsule 3-celled. 6. 18—(blue-eyed grass.) *S.*

Order V. Pentandria.

Passiflora. Calyx 5-parted, coloured: corol 5-petalled, on the calyx: nectary, a triple filamentous crown within the petals: gourd-like berry, pedicelled. 34. 97—(passion-flower.) *S.*

Exotic.

Erodium. Calyx 5-leaved: corol 5-petalled: nectariferous scales 5, alter-

nating with the filaments : arils 5, 1-seeded, awned ; beaked at the base of the receptacle ; awn spiral, bearded within. (Taken from the geranium.) 14. 73—(stork's bill.)

Southern.

PHILOXERUS. Calyx 5-parted : corol none : stamens united at the base into a small entire cup, shorter than the germ : anthers 1-celled : stigmas 2 : bladder-like capsule membranaceous, 1-seeded, valveless. 14. 73.

ACHYRANTHES. Calyx double, membranaceous permanent, outer 3-leaved, inner 5-leaved, unequal : stamens standing on the nectary, with segments between them : seed one, covered by the converging calyx. 14. 73.

OPLOTHECA. Calyx double, outer 2-leaved, scarious, convolute, truncate ; shorter than the inner—inner 1-leafed, muricate, somewhat 5-cleft, with a dense down : corol none : nectary cylindric, 5-toothed, bearing the stamens : stigma simple, capitate, hairy : bladder-like capsule 1-seeded, inclosed in the calyx. 14. 73.

* Anagallis, Lysimacha, Linum.

ORDER VII. HEPTANDRIA.

Exotic.

PELARGONIUM. Calyx 5-parted, upper division broader, ending in a capillary nectariferous tube : corol 5-petalled, irregular ; the two upper petals usually broader, with coloured veins : filaments 10, three of them usually without anthers : arils 5, each 1-seeded, awned ; some of the awns spiral. 14. 73—(stork geranium.)

ORDER VIII. OCTANDRIA.

Southern.

PISTIA. Spathe tubular-hooded, strap-like : corol none : filaments lateral ; anthers 3 to 8 : style 1 : capsule 1-celled, many-seeded. 14. 73.

* Polygala, Cardiospermum.

ORDER X. DECANDRIA.

GERANIUM. Calyx 5-leaved : corol 5-petalled, regular : nectariferous glands 5, adhering to the base of the 5 alternating long filaments : arils 5, 1-seeded, awned, beaked at the elongated top of the receptacle : awn naked or smooth within, strait. 14. 73—(cranebill, false crowfoot, herb-robert.) *S.*

Southern.

ACACIA. MIMOSA. Polygamous. Calyx tubular, 5-toothed : petals 5 : stamens 5 to 10, exsert : pod 1-celled, 2-valved. 33. 93.

DARLINGTONIA.* Calyx bell-form, 5 to 7-toothed : petals 5 : stamens 5 to 10, somewhat exsert ; anthers oblong : germ sessile, acuminate : pod falcate, many-seeded. 33. 93.

SCHRANKIA. MIMOSA. Polygamous. Calyx tubular, 5-toothed : petals 5 : stamens 8 to 10, exsert : pod 4-valved. 33. 93.

* Acacia, Oxalis.

ORDER XIII. POLYANDRIA.

SIDA. Calyx simple, angular, 5-cleft : style many-parted : capsules many, arranged circularly, 1-celled, 1 or 3-seeded. (Pedicel articulated under the apex.) 37. 74—(indian mallows.) *S.*

ALTHÆA. Calyx double, outer one 6 or 9-cleft : capsules many, arranged circularly, 1-seeded. 37. 74—(hollyhock.)

MALVA. Calyx double, outer one 3-leaved, inner one 5-cleft : capsules many, arranged circularly, 1-celled, 1-seeded. 37. 74—(mallows.) *S.*

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* I have not been able to procure De Candolle's description of this genus, which he dedicated to Dr. W. Darlington of Pennsylvania.

Hibiscus. Calyx double, outer one many-leaved ; inner one about 5-cleft : stigmas 5 : capsule 5 or 10-celled, many seeded. 37. 74—(marsh mallows.) *S.*

Exotic.

Lavatera. Calyx double, outer one 3-cleft : capsules many, many-seeded. 37. 74—(tree mallows.)

Gossypium. Calyx double, outer one 3-cleft : capsule 4-celled : seeds involved in wool. 37. 74—(cotton.)

Southern.

Malope. Calyx double, outer 3-leaved : capsules 1-seeded, irregularly aggregated. 37. 74.

Stuartia. Calyx 5-parted : petals 5 : stigma somewhat 5-lobed, capitate : capsule 5-celled, 5-valved ; cells 1 or 2-seeded : seeds ovate, bony. 37. 74.

Hopea. Calyx 5-cleft, superior : petals 5 : stamens numerous, united in 5 groups : style 1 : drupe 3-celled, with 2 of them often empty. 37. 74—(yellow leaf.)

Nuttallia. Callirhoe. Calyx simple, 5-cleft : capsules numerous, 1-seeded, united in a ring. 37. 74.

Styrax. Calyx bell-form, generally 5-toothed, inferior : corol 5 to 7-parted, on the calyx : drupe ? coriaceous, with 1 or 2, 1-seeded nuts : stamens 6 to 16, on the throat of the corol, united at the base : anthers oblong, linear. 37. 74—(storax tree.)

Halesia. Calyx 4-toothed, superior : corol 4-cleft : nut covered with bark, 4-sided, 2 or all the angles winged ; 2 to 4-celled, 2 to 4-seeded. 37. 74—(snowdrop tree.)

Gordonia. Calyx simple, 5-leaved, connate at the base : style 5-sided : stigmas 5 : capsule 5-celled, 5-valved : receptacle columnar : cells 2-seeded : seeds winged. 37. 74.

* Pinus.

CLASS XVI. DIADELPHIA.

Order V. Pentandria, to Order VIII. Octandria, or Pentoctandria.

Corydalis. Dicltra. Calyx 2-leaved : corol ringent, 1 or 2-spurred at the base : filaments 2, membranaceous, each with 3 anthers : capsule silique-like, 2-valved, compressed, many-seeded. In some species the stamens are separate, with broad membranaceous bases. 24. 62—(colic-weed.) *S.*

Fumaria. Calyx 2-leaved, caducous : corol irregular ; spurred or gibbous at the base of one petal : filaments 2, each with 3 anthers : capsule or silicle drupe-like, 1-celled, 1-seeded, not opening by valves : seeds affixed to the side of the cell. 24. 62—(fumitory.) *S.*

Polygala. Calyx 5-leaved, permanent, unequal, 2 of the leafets wing-like, larger, coloured : corol irregular, (or rather, calyx 3-leaved, corol imperfectly papilionaceous :) capsule obcordate, 2-celled, 2-valved. Keel of the corol sometimes appendaged : seeds hairy. 33. 35—(snake-root, milk-wort, low century, mountain flax.) *S.*

Southern.

Patalostemon. Petals 5, nearly equal, 4 of them alternating with the stamens, and uniting with them in a cleft tube : legume 1-seeded, included in the calyx. 32. 93.

Order X. Decandria.

A. *Legume without transverse divisions or partitions ; seeds numerous.*

(Stigma pubescent.)

Pisum. Calyx with the divisions leaf-like, about equal : banner protruding 2 folds : style compressed, carinate, villose above : legume without down at the suture. 32. 93—(pea.)

Lathyrus. Calyx with the two upper divisions shorter : style flat, villose

above, broader towards the top. (Stems mostly winged, leafets 2 or more, terminated by a divided tendril.) 32. 93—(sweet pea.) *S.*

Vicia. Calyx emarginate above, 2-toothed; 3 strait long teeth below: banner emarginate: style bearded transversely on the lower side beneath the stigma. 32. 93—(vetch.) *S.*

Ervum. Calyx 5-parted; divisions linear, acute, about equalling the corol: stigma capitate, hairy on all sides, (Torrey); glabrous, (Persoon:) legume oblong, 2 to 4-seeded. 32. 93—(creeping vetch.)

Southern.

Orobus. Style linear: corol long: calyx obtuse at the base; upper segments deeper and generally shorter. 32. 93—(bitter vetch.)

Phaca. Keel obtuse: style beardless: stigma capitate: legume 1-celled, somewhat turgid; upper suture swollen and seed-bearing within. 32. 93.

(Stigma not pubescent.)

Phaseolus. Keel, stamens and style spirally twisted together: legume compressed, falcate: seeds sub-compressed reniform. 32. 93—(bean.) *S.*

Strophostyles. Glycine. Keel, stamens and style spirally twisted together: legume terete, with a longitudinal half-breadth partition, attached to one edge: seed reniform, sub-cylindric. 32. 93—(wild bean.) *S.*

Apios. Glycine. Calyx somewhat 2-lipped, truncate, 1-toothed: keel of the corol falcate, bending back the apex of the banner: germ sheathed at the base: legume coriaceous, many-seeded. 32. 93—(ground-nut.) *S.*

Amphicarpa. Calyx bell-form, 4-toothed, obtuse and naked at the base: petals oblong, banner broader, close-pressed upon other petals, sub-sessile: stigma capitate: legume flat, stiped; seeds 2 to 4. 32. 93—(wild bean-vine.) *S.*

Galactia. Calyx 4-toothed, 2-bracted: petals all oblong: banner broader, incumbent: anthers oblong: stigma obtuse: germ on a naked stipe: legume terete: seeds many, roundish. 32. 93—(milk-way plant.) *S.*

Vexillaria. Corol resupinate; banner very large, spreading, overshadowing the wings: calyx bell-form or tubular, 5-toothed: legume linear, very long, acuminate. 32. 93—(butterfly-weed.) *S.*

Robinia. Calyx small, bell-form, 4-cleft. upper division 2 parted: banner large, reflexed, roundish: legume compressed, elongated, many-seeded: seeds compressed, small. 32. 93—(locust-tree.) *S.*

Astragalus. Calyx 5-toothed: keel of the corol obtuse: legume with a longitudinal half-breadth partition, attached to one edge, incurved at the suture below. 32. 93—(milk vetch.) *S.*

Galega. Tephrosia. Calyx with subulate teeth nearly equal; stamens often monadelphous: legume compressed, sub-coriaceous. 32. 93—(goat's rue.) *S.*

Medicago. The keel deflected from the direction of the banner: legume compressed, spiral. 32. 93—(lucerne clover, medick.) *S.*

Exotic.

Colutea. Calyx 5-cleft with the keel obtuse: style bearded on its back through its whole length: legume inflated, opening on the upper suture at the base. 32. 93—(bladder senna, bush locust.)

Southern.

Indigofera. Calyx spreading: keel with a subulate spur both sides; legume linear, small, terete or quadrangular. 32. 93—(indigo.)

Glycyrrhiza. Liquiritia. Calyx tubular, equal, 5-parted, gibbous at the base: banner erect, reflexed at the sides, including the other petals: wings spreading; keel 2-cleft: legume oblong, subovate, compressed, generally hispid, 2 to 6-seeded. (Flowers racemed.) 32. 93—(liquorice.)

Oxytropis. Astragalus. Keel terminating above in a subulate appendage: legume with a longitudinal half-breadth partition, attached to one edge; the upper suture inflexed. 32. 92.

Dolichos. Banner with two oblong parallel callous processes at the base, compressing the wings beneath them. 32. 93—(cowhage.)

Trigonella. Banner and wings sub-equal, spreading, resembling a 3-petalled corol: legume often curved, compressed. 32. 93—(fenugreek.)

Thyrsanthus. Calyx 2-lipped; upper lip truncate, emarginate; lower 3-cleft: banner callous at the base; wings cohering at the top: germ sheathed by a small toothed tube: legume terete-torulose. 32. 93.

Lupinaster. Calyx bell-form, 5-toothed: teeth setaceous, one under the keel: stigma hooked: legume terete, without joints. 32. 93.

B. *Legume without transverse divisions or partitions, seeds few, or single.*

Melilotus. Flowers racemed: calyx tubular, 5-toothed: keel simple, shorter than the wings and banner: legume rugose, longer than the calyx, or about as long. (Taken from the trifolium.) 32. 93—(melilot clover.) *S.*

Trifolium. Flowers sub capitate: legume included in the calyx, not opening by valves, 1 to 4-seeded. (Leaves always ternate.) 32. 93—(clover.) *S.*

Southern.

Dalea. Calyx half 5-cleft: corol partly papilionaceous: wings and keel adnate to the undivided column of stamens: legume 1-seeded, included in the calyx. 32. 93.

Psoralea. Calyx 5-cleft or 5-toothed; lower segments mostly elongated: legume the length of the calyx, 1-seeded, somewhat beaked, valveless. 32. 93.

C. *Fruit or loment in several joints, or in a single-seeded piece.*

Hedysarum. Calyx 5-cleft: keel of corol transversely obtuse: loment many-jointed; joints 1-seeded, truncate, compressed, generally hispid. Plants mostly with ternate leaves. 32. 93—(bush clover.) *S.*

Lespedeza. Calyx 5-parted, 2-bracted: divisions nearly equal: keel of the corol transversely obtuse: legume lens-form, unarmed, 1-seeded. (Leaves always ternate. Taken from the hedysarum.) 32. 93—(bush clover.) *S.*

Aeschynomene. Calyx 2-lipped, lips toothed: stamens united in two equal parcels: loment compressed, one suture strait, the other lobed; joints truncate, 1-seeded. 32. 93—(false sensitive plant.) *S.*

Stylosanthes. Calyx tubular, very long, bearing the corol which originates higher than the top of the germ: loment one or two-jointed, hooked. 32. 93—(pencil flower.) *S.*

Exotic.

Coronilla. Calyx 2-lipped: petals with claws: loment teretish, jointed flowers in umbels: seeds generally cylindric. 32. 93—(coronilla.)

Cicer. Calyx 5-parted, of the length of the corol, 4 upper divisions resting on the banner: legume turgid, 2-seeded; seeds gibbose, mucronate. 32. 93.—(chick-pea.)

Southern.

Zornia. Calyx inferior, bell-form, 2-lipped: banner cordate, revolute: anthers 5 oblong and 5 globose: loment jointed, hispid 32. 93.

Sesbania. Calyx 5-toothed: legume elongated (terete or linear) divided into many cells (or loment joints) by transverse partitions. 32. 93.

D. *Stamens united in one set.*

Amorpha. Calyx somewhat bell-form, 4 or 5-cleft: banner ovate, concave: wings and keel 0: legume 1 or 2-seeded, falcate. 32. 93—(false-indigo.) *S.*

Lupinus. Calyx 2-lipped: anthers, 5 oblong and 5 roundish: legume coriaceous, torulose. 32. 93—(lupine.) *S.*

Crotalaria. Corol with the banner cordate, large; keel acuminate, the membrane formed by the united filament, has a fissure on the back: style curved: legume pedicelled, turgid. 32. 93—(rattle box.) *S.*

GENISTA. Calyx 2-lipped, 5-toothed, 2 upper teeth very short: banner oblong, reflexed back from the pistil and stamens. 32. 93—(kneed-grass, dyer's broom.)

Exotic.

SPARTIUM. Calyx extended downwards: keel generally pendant: filaments adhering to the germ: stigma villose lengthwise on the upper side: legume oblong, 1 or many-seeded. 32. 93—(Spanish broom.)

ULEX. Calyx 2-leaved, 2 bracted: stamens all united: legume scarcely longer than the calyx, spinose. 32. 93—(furze.)

ARACHIS. Calyx 2-lipped: corol upside down: legume gibbous, torulose, veiny, coriaceous. 32. 93—(pea-nut.)

Southern.

ERYTHRINA. Calyx somewhat 2-lipped, various: banner long-lanceolate: legume torulose, many-seeded. 32. 93—(corol tree.)

* Baptisia, Cercis, Virgilia, Cassia.

CLASS. XVII. SYNGENESIA.

ORDER I. POLYGAMIA AEQUALIS.

A. *Florets ligulate.*

CICHORIUM. Calyx calycled: egret plumose, sessile, unequal: (Torrey:) many-leaved, chaffy: (Persoon;) receptacle somewhat chaffy. 49. 53—(succory, or endive.)

APARGIA. Calyx imbricate: receptacle naked, punctate: egret plumose, sessile, unequal. (Taken from the Leontodon.) 49. 53—(false hawk-weed.)

LEONTODON. Calyx double, imbricate, with flexible leafets: receptacle naked: egret stiped. 49. 53—(dandelion.) *S.*

PRENANTHES. Florets from 5 to 20, in a simple series, (or in one circular row:) calyx calycled: receptacle naked: egret simple, sub-sessile. 49. 53—(white lettuce.) *S.*

LACTUCA. Calyx imbricate, cylindric, with the margin of the scales membranaceous: receptacle naked: egret simple, stiped: seed smooth. 49. 53—(lettuce.) *S.*

SONCHUS. Calyx imbricate, swelling at the base: egret pilose, sessile: receptacle naked. 49. 53—(swine thistle.) *S.*

HIERACIUM. Calyx imbricate, ovate: egret simple, sessile: receptacle naked, punctate, or sub-pilose. (From white becoming yellowish.) 49. 53—(hawk-weed.) *S.*

KRIGIA. Calyx simple, many-leaved: receptacle naked: egret 5 to 8 membranous leaves, with 5 to 24 scabrous, alternating bristles: receptacle naked. 49. 53—(dwarf dandelion. *S.*)

Exotic.

TRAGOPOGON. Calyx simple, many-leaved: receptacle naked: egret plumose and stiped. 49. 53—(goat's-beard, vegetable oyster.)

Southern.

BORKHAUSIA. Calyx calycled, becoming rib-furrowed, outer scales of the outer calyx loose: receptacle naked: egret stiped, pilose. 49. 53.

TROXIMON. Calyx oblong, conic, many-leaved; leafets unequal, imbricate: receptacle naked, punctic ulate: egret sessile, pilose. 49. 53.

APOGON. Calyx 8-leaved, in a double series: receptacle naked: egret none. 49. 53.

CHONDRILLA. Receptacle naked: egret pilose, stiped: calyx calycled: florets in many series: seed rugose. 49. 53.

B. *Florets tubulous; flower capitate.*

ARCTIUM. Calyx globose, with scales hooked at the apex: egret chaff-bristly: receptacle chaffy. 49. 54—(burdock.) *S.*

ONOPORDON. Calyx imbricate, with sharp mucronate spreading scales:

egret pilose, scabrous, caducous: receptacle alveolate: seeds transversely sulcate. 49. 54—(cotton thistle.)

CNICUS. Calyx swelling, imbricate, with prickly scales: receptacle villose: egret caducous, plumose. 49. 54—(thistle.) *S.*

CARDUUS. Calyx ovate, imbricate with prickly scales: receptacle villose: egret pilose. 49. 54—(comb-tooth thistle.)

LIATRIS. Calyx imbricate, oblong: anthers entire at the base: seeds hairy, obconic: egret permanent, plumose, coloured: receptacle naked: (flowers purple.) 49. 54—(gay feather.) *S.*

VERNONIA Calyx imbricate, ovate: egret double, exterior chaffy and short, interior capillary: receptacle naked: stigma 2-cleft, shortish. 49. 55—(flat-top.) *S.*

Exotic.

CARTHAMUS. Calyx ovate, imbricate with scales, ovatish-leafy at the apex: egret chaff-hairy or none: receptacle chaff-bristly. 49. 54—(false saffron.)

CYNARA. Receptacle bristly: calyx dilated, imbricate, scales with fleshy bases, emarginate and pointed: egret plumose, sessile. 49. 54—(garden artichoke.)

Southern.

STOKESIA. Calyx foliaceous, sub-imbricate: florets of the ray funnel-form and irregular: receptacle naked: egret 4-bristled. 49. 54.

STEVIA. Calyx cylindric from a simple series of leafets: receptacle naked: egret chaff-bristled. 49. 54.

BRICKELLIA. Calyx many-leaved, imbricate: receptacle naked, dotted: egret hairy or scabrous: seed nearly glabrous, 10-streaked. 49. 54.

C. *Florets tubulous; flower discoid.*

KUHNIA. Calyx imbricate, cylindrical: egret plumose, sessile: receptacle naked: seed hairy, finely striated. 49. 55—(false boneset.) *S.*

EUPATORIUM. Calyx imbricated (rarely simple) oblong: style long, cloven half way down: egret pilose, scabrous, or rough papillose: receptacle naked: seed smooth and glandular, 5-striate. 49. 55—(boneset, thorough-wort, joe-pye.) *S.*

MIKANIA. Calyx 4 or 6 leaved, equal, 4 to 6-flowered; receptacle naked: egret pilose. 49. 55—(climbing boneset.) *S.*

CHRYSOCOMA. Calyx imbricate, oblong or hemispheric: style scarcely exsert: receptacle naked: egret pilose, scabrous: seed hairy. 49. 55—(golden locks.) *S.*

CACALIA. Calyx cylindric, oblong, somewhat calycled or scaly at the base: receptacle naked: egret pilose. (Leaves mostly succulent. 49. 55—(wild caraway.) *S.*

SPARGANOPHORUS. Calyx sub-globose, imbricate, with unequal scales recurve-spreading at the tips: receptacle naked: seed with the cup-like crown sub-cartilaginous, shining. 49. 55—(crown-cup.) *S.*

Southern.

HYMENOPAPPUS. Calyx many-leaved, spreading; leafets sub-oval, coloured: receptacle naked: egret chaffy, many-leaved (5 to 8?) segments very short, obtuse, awnless. 49. 55.

POLYPTERIS. Calyx many-leaved, spreading; leafets sub-oval, coloured: receptacle naked: egret chaffy, about 12-valved; valves rigid and cuspidate, the length of the seed. 49. 55.

MELANANTHERA. Calyx imbricate; leafets ovate, close-pressed, sub-equal: receptacle chaffy; scales keeled, the lower part embracing the florets: egret consisting of 4 or 5 unequal, unarmed awns. 49. 55.

MARSHALLIA. Calyx imbricate; scales sub-lanceolate, incumbent: receptacle chaffy: egret 5, membranaceous, acuminate, nerveless scales. 49. 55.

SANTOLINA. Calyx imbricate, hemispherical; scales keeled, having scarious points: receptacle chaffy: egret none. 49. 55.

Order II. Polygamia superflua.

A. *Flowers discoid; the ray-florets being obsolete.*

Tanacetum. Calyx imbricate, hemispheric: scales acuminate: rays obsolete, 3-cleft: egret somewhat marginal: receptacle naked. (Flowers corymbed.) 49. 55—(tansy.)

Artemisia. Calyx imbricate, ovate, with scales rounded, converging: ray-florets subulate: egret 0: receptacle somewhat villose, or naked-ish. (Flowers mostly rounded.) 49. 55—(wormwood, southern-wood.) *S.*

Baccharis. Calyx-scales ovate, sub-coriaceous, imbricate, cylindric, bell-form or ovate: pistillate and perfect florets intermixed: receptacle naked: egret pilose. (Sometimes the flowers are dicecious.) 49. 55—(groundsel-tree.) *S.*

Conyza. Calyx imbricate, with scales sub-linear-ovate, or hemispheric and sub-scarious: egret simple, capillary: receptacle naked: florets of the ray with a 3-cleft border, not composing a ray in appearance. 49. 55—(plowman's-wort.) *S.*

Gnaphalium. Calyx imbricate, with the marginal scales rounded, scarious, shortish, glossy, coloured: receptacle naked: egret pilose or plumose, scabrous: florets of the ray subulate, of the disk entire. Sometimes all the florets are perfect. 49. 55—(life-everlasting.) *S.*

Southern.

Pterocaulon. Calyx imbricate, with close-pressed, downy, sub-scarious scales: receptacle naked: perfect and pistillate florets intermixed; the pistillate ones slender; border 3-toothed; perfect ones with a 5-cleft border: egret hairy, scabrous: seed angled, hairy. 49. 55.

B. *Flowers radiate; the ligulate ray-florets very manifest.*

(Receptacle naked.)

Erigeron. Calyx imbricate, sub-hemispherical: egret pilose, double: outer egret minute and chaffy: florets of the ray linear, very narrow, numerous. 49. 55—(flea-bane, pride-weed.) *S.*

Inula. Calyx imbricate, generally squarrose: egret simple, scabrous, sometimes a minute, exterior, chaffy one: anthers ending in 2 bristles at the base: ray-florets numerous. Ray-florets always yellow. 49. 55—(elecampane.)

Aster. Calyx imbricate, the inferior scales generally spreading: egret simple, pilose: receptacle often deep-pitted. (Florets of the ray more than 10, except in solidaginoides, and a few other species; colour purple or white, never yellow. 49. 55—(star-flower.) *S.*

Solidago. Calyx oblong or sub cylindric, with oblong, narrow, pointed, strait scales, imbricate, closed upon the flower: ray-florets about 5, and fewer than 10, lanceolate, 2-toothed, equal to, or shorter than, the calyx: filaments capillary, very short: style thread-form, equalling the length of the stamens: stigma cleft, spreading: egret simple, pilose, scabrous: receptacle furrowed with dots or punctures: seeds oblong-ovate. (Yellow.) 49. 55—(golden rod.) *S.*

Arnica. Calyx hemispherical, with the leafets equal, longer than the disk: receptacle naked: egret simple, hairy: florets of the ray often without anthers. Ray-florets yellow. 49. 55. *S.*

Senecio. Calyx cylindric: leafets with withering, blackish tips, and a few small calycle leafets at the base: egret simple, capillary, copious. Ray-florets sometimes wanting. 49. 55—(rag-wort, fire-weed.) *S.*

Cineraria. Calyx simple, many-leaved, equal: egret simple. 49. 55. *S.*

Tussilago. Calyx simple, swelling; scales equal, and equalling the disk, sub-membranous: pistillate florets ligulate or without teeth: egret simple, sessile. 49. 55. (Sometimes polygamous.)—(coltsfoot.)

Boltonia. Calyx imbricate: florets of the ray numerous: receptacle conic, punctate: egret consists of many minute bristles, and generally 2 elongated bristles or horns: seed flat, margined. 49. 55—(false chamomile.) *S.*

Chrysanthemum. Calyx hemispherical, imbricate, with the scales membranous at the margin: egret none, or a narrow margin. 49. 55—(ox-eyed daisy, fever-few.) *S.*

Exotic.

Bellis. Calyx hemispherical; scales equal: egret 0: receptacle conical: seed obovate. 49. 55—(garden daisy.)

Tagetes. Calyx simple, 1-leafed, 5-toothed, tubular: florets of the ray about 5, permanent: egret 5 erect awns. 49. 55—(marigold.)

Southern.

Brachyris. Calyx cylindric-ovate, closely imbricate; scales agglutinated together: ray and disk florets about 5 to each: receptacle naked: egret very short, chaffy; glumes 5 to 8, permanent. 49. 55.

Donia. Calyx hemispherical, imbricate, squarrose, glutinous: ray-florets 30 or more, (yellow:) receptacle naked, deep-pitted: egret consists of 3 or 4 caducous, somewhat chaffy, bristles. 49. 55.

Boebera. Calyx double; outer one many-leaved; inner one 8-leaved: receptacle naked: egret pilose. 49. 55.

Trichophyllum. Calyx oblong-cylindric, many-leaved, equal: ray-florets oblong: receptacle naked: egret chaffy, minute, 5 to 8-leaved; leafets obtuse, awnless. 49. 55.

Matricaria. Calyx flat, imbricate, with scales having scarious margins: receptacle naked, terete: egret none. 49. 55.

Chrysopsis. Calyx imbricated: (ray-florets mostly yellow:) anthers naked at the base: receptacle naked: egret double; outer chaffy, minute; inner scabrous, many-rayed: seed obovate, villous. 49. 55.

Pectis. Calyx 5-leaved: ray-florets 5: receptacle naked: egret 3 to 5 awns. 49. 55.

(Receptacle chaffy or hairy.)

Verbesina. Calyx many-leaved; leafets arranged in double series: florets of the ray about 5: egret 2-awned 49. 55—(crown-beard.) *S.*

Anthemis. Calyx hemispherical; scales with scarious margins, nearly equal: egret 0, or a membranous margin: florets of the ray more than 5: receptacle chaffs flat, with a rigid acuminate apex: seed crowned with a membranous border, or egret. 49. 55—(may-weed, chamomile.) *S.*

Achillea. Calyx imbricate, ovate, unequal: egret 0: florets of the ray 5 to 10, roundish, dilated. (Flowers corymbed.) 49. 55—(yarrow.) *S.*

Heliopsis. Calyx imbricate, with ovate-linear lined scales: ray-florets linear, large: receptacle chaffy, conic; the chaffs lanceolate: seeds 4-sided: egret 0. 49. 55—(sun-ray.) *S.*

Helenium. Calyx 1-leaved, many-parted: egret 5-awned, chaffy leaves: receptacle globose, naked in the disk, and chaffy in the ray only: florets of the ray half-3-cleft: seed villose. (Leaves decurrent.) 49. 55—(false sunflower.) *S.*

Southern.

Zinnia. Calyx cylindric ovate, imbricate: rays 5, entire, permanent: receptacle chaffy: egret 2 erect awns. 49. 55.

Starkea. Calyx imbricate: receptacle hirsute: egret simple, sessile, scabrous. 49. 55.

Eclipta. Calyx many-leaved, sub-equal: disk-florets mostly 4-cleft: ray-florets very narrow, numerous: receptacle bristly: egret none: seed rugose, 2-edged, somewhat 4-sided. 49. 55.

Siegesbeckia. Outer calyx 5-leaved, spreading; inner one many-leaved, 5-angled, sub-equal; rays on one side of the flower only: receptacle chaffy: egret none: seed somewhat 4-sided. 49. 55.

Acmella. Calyx simple, leafets few: receptacle oblong, chaffy: seeds 4-sided, truncate at the summit, naked. 49. 55.

Tetragonotheca. Calyx 1-leaved, 4-sided, 4-parted, very broad: receptacle chaffy: egret none. 49. 55.

Actinella. Calyx many-leaved, sub-equal, flat: ray-florets (8 to 20) 3-toothed, widening towards the extremity: receptacle naked, hemispherical: egret chaffy; 5 to 8-awned glumes. 49. 55.

Buphthalmum. Calyx leafy: egret marginal, 4-toothed or obsolete: seeds of the ray margined, and sometimes of the disk. 49. 55—(ox-eye.)

Order III. Polygamia frustranea.

Helianthus. Calyx imbricate, sub-squarrose, leafy: receptacle flat, chaffy. egret 2-leaved, chaff-like, caducous. 49. 55—(sunflower, jerusalem artichoke.) *S.*

Rudbeckia. Calyx consisting of a double order of leafets or scales: receptacle chaffy, conic: egret a 4-toothed margin, or 0. 49. 55—(cone-flower.) *S*

Bidens. Calyx calycled, nearly equal, with or without ray-florets: receptacle flat, chaffy: egret consists of 2, 3, or 4 strong awns, with reflexed and erect lateral prickles: seeds 4-cornered. 49. 55—(burr-marygold, beggar-ticks.) *S.*

Coreopsis. Calyx double, both many-leaved (8 to 12:) inner ones many-leaved, sub-coriaceous and coloured: seeds compressed, emarginate, 2 toothed: receptacle chaffy, flat: egret 2-horned. 49. 55—(tick seed, sunflower.) *S.*

Actinomeris. Calyx simple, many-leaved, leafy, sub-equal: rays remote, elongated, (4 to 8:) receptacle small, chaffy; the leafets embracing the margin of the seed: seed compressed, margined; crowned with 2 permanent awns. 49. 55. *S.*

Exotic.

Centaurea. Calyx various, mostly imbricate, roundish: egret simple, various: receptacle bristly: corols of the ray funnel-shape, longer, irregular. 49. 54—(blue-bottle, blessed thistle.)

Southern.

Leptopoda. Calyx simple, many-parted: rays 20 or more, 3-cleft, widening at the top: receptacle naked, hemispherical: egret consists of 8 to 10 awnless chaff-like valves. 49. 54.

Balduina. Calyx imbricate, squarrose-leafy. ray-florets somewhat 3-cleft: receptacle hemi-pherical, honey-like, cellular: egret chaffy, awnless, erect, about 10 leaved: seeds immersed in the receptacle 49. 54.

Galardia. Calyx many-leaved, flat, sub-equal. rays 3-cleft, widening towards the top: receptacle bristly, hemispherical: egret chaffy; leafets 8 to 10. awned. 49. 54.

Order IV. Polygamia necessaria.

Silphium. Calyx squarrose; scales leafy, broad: egret a 2-horned margin: receptacle chaffy: seeds compressed, obcordate, margined, 2-toothed. 49. 55—(ragged-cup.) *S.*

Polymnia. Calyx double; exterior 4-5-leaved; interior 10-leaved; leafets concave: egret 0: receptacle chaffy. 49. 55—(leaf-cup.) *S.*

Iva. Calyx about 5-leaved or 5-parted: styles 2, long: seed obovate, naked, obtuse: receptacle hairy, or chaff-bristly: ray 5-flowered. 49. 55—(high-water shrub.) *S.*

Exotic.

Calendula. Calyx many-leaved, equal: receptacle naked: egret none: seeds of the disk membranaceous. 49. 55—(pot marygold.)

Southern.

CHAPTALIA. Calyx sub-imbricated, many-leaved: pistillate florets in two series; outer ones rayed; inner ones naked: disk-florets 2-lipped: receptacle naked: egret capillary. 49. 55.

PARTHENIAM. Calyx 5 leaved: rays very small: receptacle chaffy, minute; outer scales dilated: seed obovate, minutely 3-awned. 49. 55.

CHRYSOGONUM. Calyx 5-leaved: receptacle chaffy: egret 1-leaved, 3-toothed: seed surrounded by a 4-leaved calycle. 49. 55.

BALTIMORA. Calyx cylindric, many-leaved: rays 5: receptacle chaffy: egret none: seed 3-sided. 49. 55.

GYMNOSTYLUS. Calyx many-leaved, the leafets in a single series: pistillate florets apetalous: seeds compressed, somewhat toothed at the summit, awned with the permanent style. 49. 55.

ORDER V. POLYGAMIA SEGREGATA.

ELEPHANTOPOS. Partial calyx 4-flowered: florets 5-cleft, ligulate, perfect: receptacle naked: down setaceous. 49. 55—(elephant-foot.) *S.*

Exotic.

ECHINOPS. Proper calyx 1-flowered: corol tubular, perfect: receptacle setose: egret obsolete. 49. 54—(globe thistle.)

CLASS XVIII. GYNANDRIA.

ORDER I. MONANDRIA.

A. *Anther adnate, sub-terminal, not caducous; masses of pollen affixed by the base, and made up of angular particles.*

ORCHIS. Corol ringent-like, upper petal vaulted: lip dilated, spurred beneath: masses of pollen 2, adnate, terminal. 7. 21—(orchis.) *S.*

HABENARIA. ORCHIS. Corol ringent-like: lip spurred at the base beneath: glands of the stipes of the masses of pollen naked and distinct; cells of the stipes adnate, or separated. 7. 21. *S.*

B *Anther parallel with the stigma, not caducous, masses of pollen affixed to the summit of the stigma, and made up of farinaceous or angular particles.*

GOODYERA. NEOTTIA. Corol ringent-like, the 2 lower petals placed under the gibbous lip, which is undivided above: style free: constituent particles of the masses of pollen angular. 7. 21—(rattlesnake-leaf, scrophula weed.) *S.*

NEOTTIA. Corol ringent-like, the 2 lower petals placed under the lip, which is beardless; interior petals converging: style wingless: constituent particles of the masses of pollen farinaceous. 7. 21—(ladies' tresses.) *S.*

LISTERA. Corol irregular: lip pendant, 2-lobed: style wingless, minute, with the anther inserted at its base: pollen farinaceous 7. 21—(lily orchis.) *S.*

Southern.

CRANICHIS. Corol 5-petalled, resupinate, sub-ringent: lip behind, vaulted: pollen farinaceous. 7. 21.

C. *Anther inserted, terminal, not caducous; masses of pollen farinaceous or angular.*

POGONIA. Petals 5, distinct, without glands: lip sessile, cowled, crested internally: pollen farinaceous. 7. 21—(snake-mouth.) *S.*

TRIPHORA. Petals 5, distinct, equal and converging, without glands: lip unguiculate, cowled: style spatulate, even, flattened, wingless: pollen farinaceous. 7. 21—(three-bird orchis.) *S.*

CYMBIDIUM. CALOPOGON. Petals 5, distinct: lip behind, (or inverted,) unguiculate: the lamina bearded: style free: pollen angular. 7. 21—(grass pink.) *S.*

Arethusa. Petals 5, connate at the base: lip below, growing to the style, cowled above, crested within: pollen angular. 7. 21—(arethusa.) *S.*

D. *Anther moveable, terminal, caducous; masses of pollen at length becoming wax-like.*

Tipularia. Petals spatulate, spreading: lip entire, sessile, conspicuously spurred below at the base: style wingless, lengthened, free: anther in the form of a lid, permanent; masses of pollen 4, parallel. 7. 21—(limodore.) *S.*

Malaxis. Petals 5, narrower than the lip, spreading or deflexed; lip flattened, undivided, sessile, often exterior: style lengthened: masses of pollen 4, parallel, affixed to the summit of the stigma. Flower turned upside down by the twisting of the preduncle when the corol opens. 7. 21—(tway-blade.) *S.*

Microstylis. Petals 5, converging, one only deflexed, 2 inner ones filiform: lip about equalling the petals in length, erect, sessile, concave, truncate, and 2-toothed at the summit: style very minute: masses of pollen 3. 7. 21—(snake-mouth tway-blade.) *S.*

Corallorrhiza. Petals equal, converging: lip either unguiculate, or with an obsolete spur: masses of pollen 4, oblique, not parallel: style free. 7. 21—(coral root, adam-and-eve.) *S.*

Amplectrum. Petals equal, converging; lip unguiculate, not spurred or extended at the base: masses of pollen 4, oblique, lenticular; situated below the summit of the style. 7. 21.

Southern.

Bletia. Petals 5, distinct: lip sessile, cowled, somewhat spurred at the base: style free: masses of pollen 4 to 8, 2-lobed. 7. 21.

Calypso. Petals ascending, 1-sided: lip inflated, spurred beneath towards the point: style dilated, petal-like: masses of pollen 4. 7. 21.

Epidendrum. Masses of pollen 4, parallel, separated by a permanent partition; each mass with a granulated elastic filament at the base: style united lengthwise with the claw of the lip into a tube 7. 21.

Order II. Diandria.

Cypripedium. Calyx coloured, 4-leaved, spreading: corol 0, (by some the calyx is called a corol:) nectary large, hollow, inflated: style with a terminal lobe, and petal-like appendage on the upper side. 7. 21—(ladies' slipper.) *S.*

Order V. Pentandria.

Plants bearing seeds in follicles; and pollen in masses, called pollinia.

Asclepias.* Petals 5, reflexed: nectaries 5, concave, erect, containing little horns: each stamen with a pair of pendulous masses of pollen, suspended from the top of the stigma: follicles smooth. 30. 47—(milk-weed, silk-weed.) *S.*

Acerates Corol reflexed: nectary 5-leaved; leafets concave, short, close-pressed to the angles of the filaments: each stamen with a pair of pendulous

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* Plants of this artificial order (Natural order Apocyneae of Jessieu) were placed in class Pentandria, order Digynia, by Linneus. The celebrated James Edward Smith, shewed us the propriety of removing them to the class Gynandria. Afterwards a mistake, committed by that distinguished naturalist, Robert Brown, induced botanists to continue them in the class Pentandria, without questioning his accuracy—a case in point, shewing the danger of great men's errors. *The stamens certainly proceed from the stigma only, in all stages of maturity, in the Asclepias syriacus.* This I know from careful observations made under a high magnifying power for the last six years. The naked masses of glutinous pollen resembling the same in the family of Orchideae, may be worthy of our attention also.

masses of pollen : follicle smooth. 30. 47. Corol 3 or 4 times as long as the calyx, with purple tips. *S.*

Apocynum. Corol bell-form : stamens with converging anthers, proceeding from the middle of the stigma and alternating with 5 nectaries : stigma thick, almost sessile ; follicles in pairs, long-linear. 30. 47—(dogbane, indian hemp.) *S.*

Gonolobus. Corol wheel-form, 5-parted : nectary simple, cylindric, somewhat fleshy, 5-lobed, depressed ; equal with the cases of the anthers, 5-angled, without winged lateral margins or terminal membranaceous bristles : masses of pollen in 5 pairs, even, transverse : follicles 2. 30. 47—(false choak-dog.) *S.*

Periploca. Calyx minute, 5-cleft, permanent : corol wheel-form, flat, 5-parted : nectary pitcher-form, 5-cleft, putting out 5 threads, surrounding the stamens : style 1 : stigma capitate, 5-cornered : follicles in pairs, inflated : seed comose. 30 47—(milk vine.)

Southern.

Podostigma. Anatherix ? Stigma on a stipe : masses of pollen 10, smooth, pendulous : nectary 5-leaved ; leaves compressed : corol bell-form : follicles smooth. 30. 47.

Enslenia. Calyx small, 5-parted, permanent : corol 5-parted ; segments converging, erect : nectary 5-parted, petal-like, divided almost to the base ; segments truncate, flat, each terminated by 2 central filaments : each stamen with a pair of pendulous cylindric masses of pollen, suspended from the top of the conic stigma : follicles in pairs, small. 30. 47.

Cynanchum. Calyx 5-toothed, small, permanent : corol wheel-form : nectary simple, cylindric, 5 to 20-lobed, surrounding the orifice of the tube : each stamen with a pair of pendulous masses of pollen suspended from the double stigma . follicles in pairs : seed comose. 30. 47.

Echites. Contorted. Calyx 5 parted, small : corol salver-form ; border 5-cleft, orifice naked : anthers rigid, acuminate, converging in the form of a cone, proceeding from the middle of the ring-like 2-lobed stigma : follicles in pairs, very long and straight : seed comose. 30. 47.

Amsonia. Calyx 5-parted : corol funnel-form, orifice closed : follicles in pairs, erect : seed terete, naked, and obliquely truncated. 30. 47.

Stylandra. Calyx 5-parted, minute : corol without a tube, 5-parted ; segments long, erect, converging : nectary simple, 5-parted, segments bag-like, compressed, with points recurved, forming a rigid lid : tube reversed, very long : each stamen with a pair of pendulous masses of pollen suspended from the stigma : follicles in pairs, slender. 30. 47.

Order VI. Hexandria.

Aristolochia. Calyx 0 : corol superior, 1-petalled, ligulate, inflated at the base : capsule 6-celled, many-seeded. 11 23—(birthwort.) *S.*

Order X. Decandria.

Asarum. Calyx somewhat bell-form, 3 or 4-cleft, superior : corol 0 : anthers proceeding from the middle of the filaments : stigma 6-cleft : capsule coriaceous, 6-celled, crowned with the calyx. 11 23—(wild ginger, or white snake-root.) *S.*

CLASS XIX. MONOECIA.

Order I. Monandria.

Zostera. Calyx and corol 0 : stamens and pistils in 2 rows on one side of a spadix . spathe leaf like. Staminate flowers with anthers ovate, sessile, alternating with the germs. Pistillate flowers with the germ ovate ; style 2-cleft ; drupe 1-seeded. 2. 7—(grass wrack, sea eel-grass.) *S.*

Caulinia. Staminate flowers—calyx 0 : corol 0 : anthers sessile. Pistillate flowers—calyx 0 : corol 0 : style filiform : stigma 2-cleft : capsule 1 seeded. 15. 6. (Flowers axillary.)—(river nymph.) *S.*

Zannichellia. Staminate flowers—calyx and corol 0. Pistillate flowers—calyx 1-leaved : corol 0 : style 1, stigma peltate : little germs about 4, each 1-seeded. 2. 13.

Chara. Staminate flowers—calyx 0 : corol 0 : anthers globose, sessile. Pistillate flowers—calyx 0 : corol 0 : style 0 : stigmas 5 : berry 1-celled, many-seeded. 15. 6—(chara.) *S.*

Order II. Diandria.

Podostemum. Staminate flowers—calyx 0 : corol 0 : stamens affixed to a pedicel. Pistillate flowers—calyx 0 : corol 0 : germ ovate : stigma 1, sessile : capsule 2-celled, 2-valved, many-seeded ; seeds minute. 54. 6—(thread-foot.) *S.*

Lemna. Staminate flowers—calyx 1-leafed : corol 0 : stamens seated on the base of the germ. Pistillate flowers—calyx 1-leafed : corol 0 : style cylindric : stigma funnel-form : capsule 1-celled, 2 to 4-seeded. Always perfectly monoecious in North America. 54. 6—(duck-meat, water flaxseed.) *S.*

Order III. Triandria.

Typha. Ament cylindric, dense-flowered. Staminate flowers—calyx obsolete, 3-leaved : corol 0 : stamens 3 together, on a chaffy or hairy receptacle, united below into one. Pistillate flowers—below the staminate : calyx 0 : corol 0 : seed 1, pedicelled ; the pedicels surrounded at the base with long hairs resembling egret. 3. 8—(cat-tail, or reed mace.) *S.*

Sparganium Ament globose. Staminate flowers—calyx 3-leaved : corol 0. Pistillate flowers—calyx 3-leaved . corol 0 : stigma 2-cleft : drupe juiceless, 1 or 2-seeded. 3. 8—(burr-reed.) *S.*

Carex. Aments imbricate, (usually in cylindric spikes.) Staminate flowers—calyx-scales single : corol 0. Pistillate flowers—calyx scales single : corol inflated, monopetalous, 2-toothed at the apex : stigmas 2 or 3 : nut 3-sided, enclosed in the inflated, permanent corol, which becomes an utriculus-like permanent aril. Sometimes diœcious. 3. 9—(sedge.) *S.*

Scleria. Staminate flowers—calyx-glume 2 or 6-valved, many-flowered : corol-glumes awnless. Pistillate flowers—calyx 2 or 6-valved, 1-flowered, coral none : stigmas 1 to 3 : nut coloured, sub-globose. 3 9—(whip grass.) *S.*

Tripsacum. Staminate flowers—calyx-glume 2-flowered, outer one staminate, inner one neutral : corol-glume membranaceous. Pistillate flowers—calyx glume 1 or 2-flowered, covered with a 1-leafed involucre perforated with hollows near the base : corol with numerous thin membranaceous valves : styles 2 : seed 1. 4. 10—(sesame grass.) *S.*

Comptonia. Staminate flowers—ament cylindric, with calyx-scales 1-flowered : corol 2-petalled or none : filaments 2-forked. Pistillate flowers—spike or ament ovate : corol 6-petalled, (the corol may be called a calyx :) styles 2 : nut oval, 1-celled. 50. 99—(sweet fern) *S.*

Exotic.

Coix. Staminate flowers—in remote spikes : calyx-glume 2-flowered, awnless : corol-glume awnless. Pistillate flowers—calyx-glume 2-flowered : corol-glume awnless : style 2-parted : seed covered with the bone-like calyx. 4. 10—(job's tear.)

Southern.

Zea. Staminate flowers—calyx-glume 2-flowered, awnless : corol-glume awnless. Pistillate flowers—calyx-glume 2-valved, (number of valves increased by cultivation :) style 1, very long, filiform, pendulous : seed solitary, immersed in an oblong receptacle. 4. 10—(indian corn.)

TRAGIA. Staminate flowers—calyx 3-parted : corol none. Pistillate flowers—calyx 5-parted : corol none : style 3-cleft : capsule tricoccus, 3-celled : seed solitary. 38. 96.

MANISURIS. Somewhat polygamous. Staminate flowers—calyx valves 2, lanceolate, flexuous : corol a mere rudiment. Pistillate flowers—calyx-glume 2-valved, the outer one roundish, cartilaginous : corol 2-valved. In the perfect flowers there are 3 stamens, 2 styles, seed 1. In some the stamens, styles and nectaries are wanting. 4. 10.

* Grasses of Class 3, Order 2, Sec. E.

ORDER IV. TETRANDRIA.

ERIOCAULON. Common calyx many-leaved ; florets many, in an imbricate head : partial perianth superior, 2 or 3-leaved. Staminate flowers central, with monopetalous cleft corols. Pistillate flowers marginal, with 2-petalled corols : stigmas 2 or 3 : capsule 2 or 3-celled, 2 or 3-lobed : seed 1, crowned with the corol. 6. 13—(pipe-wort.) *S.*

ALNUS. Staminate flowers—ament composed of wedge-form, truncate, 3-flowered receptacles : calyx a scale, 3-lobed : corol 4-parted. Pistillate flowers—calyx 2-flowered scales, somewhat 3-cleft : corol 0 : seed compressed, ovate, wingless. 50. 99—(alder.) *S.*

BŒHMERIA. Staminate flowers—calyx 4-parted : corol 0 : nectary 0. Pistillate flowers—calyx 0 : corol 0 : styles 2 : seed 1, compressed. (Flowers in cylindric spikes.) 53. 98—(false nettle.) *S.*

URTICA. Staminate flowers—calyx 4-leaved : corol 0 : nectary central, cyathiform. Pistillate flowers—calyx 2-leaved, (2-valved :) corol 0 : seed 1, glossy. 53. 98—(nettle.) *S.*

PARIETARIA. Polygamous. Perfect flowers—calyx 4-cleft inferior : corol 0 : stamens elastic : style 1 : seed 1. Pistillate flowers—calyx 2-leaved : seed covered with the dry elongated calyx. 53. 98—(pellitory.) *S.*

MORUS. Staminate flowers—calyx 4-parted : corol 0. Pistillate flowers—calyx 4-leaved : corol 0 : styles 2 : calyx becoming berry-like : seed 1. 53. 98—(mulberry.) *S.*

Southern.

PACHYSANDRA. Calyx about 4-leaved : corol none : filaments sub-clavate : styles 3 : capsules 3-horned, 3-celled ; cells 2-seeded. 38. 96.

DIOTIS. Staminate flowers—calyx 4-leaved : corol none. Pistillate flowers—calyx 1-leaved, 2-horned : style 2 parted : seed 1, covered by the 2-horned calyx. 12. 29.

ORDER V. PENTANDRIA.

CROTONOPSIS. Staminate flowers—calyx 5-parted : corol 5-petalled. Pistillate flowers—calyx 5-parted : corol none : stigmas 3, twice 2-cleft : capsule 1-seeded. 38. 98—(false purge.) *S*

AMARANTHUS. Staminate flowers—calyx 3 or 5-leaved : corol 0 : stamens 3 or 5. Pistillate flowers—calyx and corol as the staminate : styles 3 : capsule 1-celled, opening transversely : seed 1. 54. 30—(amaranth, red cockscomb.) *S.*

XANTHIUM. Staminate flowers—common calyx imbricate : anthers in contact, but not united : corol 5-cleft, funnel-form : receptacle chaffy. Pistillate flowers—involucre 2-leaved 1-flowered : corol 0 : drupe dry, muricate, 2-cleft : nut 2-celled. 54. 98—(sea-burdock.) *S.*

AMBROSIA. Staminate flowers—common calyx 1-leaved : anthers in contact, but not united : corol 1 petalled, 5 cleft, funnel-form : receptacle naked. Pistillate flowers—calyx 1-leaved, entire, the swelling part 5-toothed, 1-flowered : corol 0 : nut from the indurated calyx 1-seeded. 54. 98—(hog-weed.) *S.*

Southern.

SCHISANDRA. Calyx 9-leaved ; leaves in three series : corol none : anthers sub-sessile, cohering at the tips : berries 1-seeded, inserted on an elongated, thread-form receptacle. 11. 77.

Order VI. Hexandria.

Zizania. Staminate flowers—calyx 0 : corol-glume 2-valved, sub-awned. with pistillate flowers intermixed. Pistillate flowers—calyx 0 : corol-glume 2-valved, cucullate, awned : style 2-parted : seed 1, invested in the plaited corol. 4. 10—(water oats.) *S.*

Hydrochloa. Pistillate flowers—calyx none : corol 2-valved, awnless. Staminate flowers—calyx none : corol 2-valved, awnless : stigmas 2, very long : seed 1, reniform. 4. 10.

Order XII. Polyandria.

A. *Stems not woody.*

Ceratophyllum. Staminate flowers—calyx many-parted : corol 0 : stamens 16—20, short, with tricuspidate anthers. Pistillate flowers—calyx 6-leaved or many-parted, imbricated : corol 0 : pistil 1, with the stigma nearly sessile, oblique : nut 1-seeded. 15. 91—(horn-wort.)

Myriophyllum. Staminate flowers—calyx 4-cleft : petals 4, caducous : stamens 4, 6, or 8. Pistillate flowers—calyx and corol like the staminate, excepting that the calyx is often 4-leaved : germs 4 : style 0 : stigmas 4, hairy : seeds 4, having a bark ; sub-globose, 1-seeded. 15. 88—(water milfoil.) *S.*

Sagittaria. Staminate flowers—calyx 3-leaved : corol 3-petalled : filaments mostly 24. Pistillate flowers—calyx and corol as in the staminate : germs many : capsules aggregate, 1-seeded, not opening. 5. 13—(arrow-head.) *S.*

Arum. Spathe cucullate, 1-leaved : spadix not entirely covered with the fructification ; being more or less naked above, with pistillate flowers beneath, and staminate in the middle ; (sometimes a few are staminate beneath : berry mostly 1-seeded, generally cirrose-glandular beneath. 2. 7—(indian turnip, wake-robin.) *S.*

Leconta.* Spathe convolute : calyx and corol none : spadix naked above, bearing sessile anthers below the middle, and germs at the base : berry 1-celled, many seeded. 2. 7. *S.*

Calla. Spathe ovate, becoming expanded : spadix covered with the fructification : stamens intermixed. Staminate flowers—calyx and corol 0 ; anthers sessile. Pistillate flowers—calyx and corol 0 : berries 1-celled, many-seeded, crowned with the short style. 2. 7—(water arum.)

Euphorbia.† Involucre perianth-like, inflated, with alternating petal-like segments. Staminate florets 12 or more, at the base of the stipe of the pistillate flower, each consisting of an anther united to a pedicel by a filament. Pistillate flower central, single, stiped ; with 3 two-cleft styles : capsule 3-lobed. 38. 96—(caper, spurge.) *S.*

Exotic.

Poterium. Staminate flowers—calyx 4-leaved : corol 4-parted : stamens 30 to 50. Pistillate flowers—calyx and corol like the staminate : pistils 2 : berry from the indurated tube of the corol. 54. 92—(burnet.)

Southern.

Caladium. Anthers peltate, many-celled, collected into a spike at the summit of the spadix : style none : germs at the base of the spadix : stigma umbilicate : berry 1-celled, many-seeded. 2. 7.

Quercus. Staminate flowers—ament loose : calyx sub-5-cleft : corol none :

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* Taken from Arum, and dedicated to Leconte (well known to the scientific world) by W. Cooper, Esq. The merits of the latter are not yet sufficiently known to be duly estimated.

† I have some doubts on the subject of removing this genus to this class. Linneus placed it in the omitted class Dodecandria. Perhaps it ought to be left in class Polyandria.

B. *Stems woody.*

stamens 5 to 10. Pistillate flowers—calyx 1-leafed, entire, scabrous, being a woody cup: style one, stigmas 2 to 5: nut or acorn 1-celled, 1-seeded, coriaceous, surrounded at the base by the permanent calyx. 50. 99—(oak.) *S.*

Corylus. Staminate flowers—ament cylindrical, imbricate: calyx a 3-cleft scale: perica p none: stamens about 8. Pistillate flowers—calyx 2-parted, lacerated: stigmas 2: nut ovate, surrounded by and included in the permanent leaf-like calyx. 50. 99—(hazlenut.) *S.*

Fagus. Staminate flowers—ament roundish: calyx 5 or 6-cleft, bell-form: stamens 5 to 12. Pistillate flowers—calyx 4-toothed, setose: germs 2: nuts 2, inclosed in the calyx, becoming coriaceous echinate. 50. 99—(beach.) *S.*

Castanea. Polygamous. Staminate flowers—ament naked, linear: corol (or calyx) 1-leaved, 5 or 6-parted: stamens 10 to 20. Pistillate flowers—calyx 5 or 6-leaved, (or 5 or 6-lobed) muricate; germs 3: stigma pencil-form: nuts 3, with coriaceous putamen, inclosed in the calyx, becoming echinate. 59. 99—(chesnut.) *S.*

Betula Staminate flowers—ament cylindric, imbricate, scales peltate, 3-flowered: stamens 0 to 12. Pistillate flowers—calyx a 2 or 3-flowered scale: seed 1, winged. 50. 99—(birch.) *S.*

Carpinus. Ament imbricate, cylindric. Staminate flowers—calyx scales ciliate: stamens 10. Pistillate flowers—in a loose ament: calyx scales large, 3-lobed, 1 or 2 flowered: corol 3-cleft: styles 2: nut ovate sulcate. 50. 99—(hornbeam.) *S.*

Ostrya. Ament imbricate, cylindric. Staminate flowers—calyx a 1-flowered scale: filaments ramose. Pistillate flowers—ament naked: capsule inflated, imbricate at its base, 1-seeded. 59. 99—(hop hornbeam.) *S.*

Platanus. Ament globose Staminate flowers—corol none or scarcely apparent, anthers growing around the filaments. Pistiliate flowers—calyx many-leaved: style with a recurved stigma: seed roundish, crowned with the mucronate style, with egret-like hairs at the base. 50. 99—(button-wood, false sycamore.) *S.*

Liquidambar. Staminate flowers—ament conic, surrounded with a 4-leaved involucre: corol 0: filaments numerous. Pistillate flowers—ament globose, surrounded with a 4-leaved involucre: calyx 1-leafed, pitcher-form, 2-flowered; styles 2: capsules 2, surrounded at the base by the calyx, 1-celled, many-seeded. 51. 99—(sweet gum.) *S.*

Juglans. Staminate flowers—ament imbricate: calyx a scale, generally 5-parted: corol 4 or 5-parted: stamens 18 to 36. Pistillate flowers—calyx 4-cleft, superior: corol 4-cleft or 4-parted: styles 1 or 2: drupe partly spongy: nut rugose and irregularly furrowed. 50. 94—(butternut, black walnut.) *S.*

Carya Staminate flowers—ament imbricate: calyx 3-parted scales: corol 0: stamens 4 to 6. Pistillate flowers—calyx 4-cleft, superior: corol 0: styles 0: stigma disk-like, 4-lobed: pericarp 4-valved: nut sub-quadrangular, even. 50. 94—(hickory, walnut.) *S.*

Order XV. Monadelphia.

A. *Stems not woody.*

Acalypha. Staminate flowers—calyx 3 or 4-leaved, or 3 or 4-parted: corol none: stamens 8 to 16. Pistillate flowers—calyx and corol like the staminate: styles 3, 2-cleft: capsule tricoccous, 3-celled. (Having large bracts.) 38. 96—(three seed mercury.) *S.*

Phyllanthus. Staminate flowers—calyx 5 or 6-parted: filaments united in a column; anthers 3, and generally several barren filaments. Pistillate flowers—calyx and corol like the staminate: nectary with a 12-angled margin: styles 3: capsule tricoccous. 38. 96—(leaf-flower.) *S.*

Melothria. Staminate flowers—calyx 1-leaved, 3 to 5-toothed: corol bell-form: filaments 3. Pistillate flowers—calyx and corol as in the staminate,

superior: style 1: stigmas 3: berry 3-celled, many-seeded. 34. 97—(creeping cucumber.) *S.*

Momordica. Staminate flowers—calyx 5 or 6-cleft: corol 5 or 6-parted: filaments 3. Pistillate flowers—style 3-cleft: berry gourd-like and bursting elastically: seeds compressed. 34. 97—(balsam apple, wild cucumber.)

Sicyos. Staminate flowers—calyx 5-toothed: corol 5-parted: filaments 3. Pistillate flowers—styles 3-cleft: berry gourd-like, 1-seeded. 34. 97—(single-seed cucumber.) *S.*

Exotic.

Cucumis. Staminate flowers—calyx 5-toothed: corol 5-parted: filaments 3. Pistillate flowers—calyx and corol like the staminate: stigmas 3, thick, 2-parted: berry with sharpish seeds. 34. 97—(cucumber, musk-melon.)

Cucurbita. Staminate flowers—calyx 5-toothed: corol 5-cleft: filaments 3. Pistillate flowers—calyx and corol like the staminate: pistil 3-cleft: pomaceous berry large, 3 to 5-celled: seeds thickened at the margin. 34. 97—(gourd, squash, pumpkin, water-melon.)

Ricinus. Staminate flowers—calyx 5-parted: stamens numerous. Pistillate flowers—calyx 3-parted: styles 3, 2-cleft: capsules echinate, 3-celled, 3-seeded. 38. 96—(palma christi, or castor oil plant.)

Southern.

Jatropha. Staminate flowers—calyx 5-leaved or wanting: corol funnel-form: stamens 10, with every one shorter. Pistillate flowers—calyx none: corol 5-petalled, spreading: styles 3, 2-cleft; capsule 3-celled, 1-seeded. 38. 96—(physic nut.)

Stillingia. Staminate flowers—involucre hemispherical, many-flowered, or wanting: perianth tabular, erose: stamens 2 or 3, exsert. Pistillate flowers—calyx 1-flowered, inferior: style 3-cleft: capsule 3 grained. 38. 96—(tallow tree.)

Croton. Staminate flowers—calyx cylindrical, 5-toothed: petals 5, or none: stamens 10 to 15. Pistillate flowers—calyx 5-leaved or none: corol none: styles 3 or 6, 2-cleft: capsule 3-grained, 3-celled, 3-seeded. 38. 96.

B. *Stems woody.*

Pinus. Staminate flowers—calyx 4-leaved, peltate: corol 0: stamens many: anthers naked. 2, sessile, 1-celled. Pistillate flowers—calyx in strobiles or cones, scales closely imbricate. 2-flowered: pistil 1: nut with a membranaceous wing. (Perhaps more properly a samara.) 51. 100—(pine.) *S.*

Thuja. Staminate flowers—ament imbricate: calyx a scale: corol 0: anthers 4, sessile. Pistillate flowers—ament a strobile: calyx a 2-flowered scale: corol 0: nut 1, surrounded with a marginal wing. 51. 100—(arbor vitae.) *S.*

Cupressus. Staminate flowers—ament ovate, imbricate: calyx a peltate scale: corol 0: anthers 4, sessile. Pistillate flowers—ament strobilaceous: calyx a 1-flowered peltate scale; corol none: germs 4 to 8, under each scale of the calyx: nuts angular, compressed. 51. 100—(white cedar.) *S.*

CLASS XX. DIOECIA.

Order II. Diandria.

Vallisneria. Staminate flowers—spathe ovate, 2-parted: spadix covered with minute florets: perianth 3-parted. Pistillate flowers—spathe 2-cleft, 1-flowered: perianth 3-parted, superior: corol 3-petalled: stigmas strap-like, 2-cleft: capsule valveless, 1-celled: seeds numerous, attached to the sides. 1. 22—(tape-grass.)

Salix. Staminate flowers—ament cylindric: calyx a 1-flowered scale, with a nectariferous gland at the base: stamens 1 to 6. Pistillate flowers—ament and calyx like the staminate: stigmas 2: generally 2-cleft: capsule 1-celled, 2-valved: seeds many, with egret-like down. 50. 99—(willow.) *S.*

FRAXINUS. Polygamous. Perfect flowers—calyx 0, or 3 or 4-parted: corol 0, or 4-petalled: pistil 1: samara 1-seeded, with a lanceolate wing. Pistillate flowers—calyx, corol and pistils same as perfect. 44. 37—(ash.) *S.*

Southern.

BORYA. Staminate flowers—calyx 4-leaved: corol none: stamens 2 or 3. Pistillate flowers—stigma capitate: berry 1-seeded. 10. 16.

CERATIOLA. Calyx bud like, imbricated with 6 to 8 scales: corol none: stamens 2, exsert: stigmas unequal, (4 to 6) 2 of them larger: berry with 2 bony seeds. 18. 51—(horn-bush.)

ORDER III. TRIANDRIA.

EMPETRUM. Staminate flowers—calyx bud-like, imbricated with about 9 scales; the 3 innermost are petal-like: stamens long. Pistillate flowers—calyx and corol as in the staminate; stigmas 9: berry 9-seeded: seeds bony. 18. 51—(crow-berry.)

Exotic.

FICUS. Common receptacle fleshy, (becoming the fruit) enclosing the apetalous florets: both staminate and pistillate, either in the same, or in distinct individuals. Staminate flowers—calyx 3-parted. Pistillate flowers—calyx 5-parted: pistil 1, lateral: seed 1, covered with the closed, permanent, somewhat fleshy calyx. 53. 98.—(fig-tree.)

ORDER IV. TETRANDRIA.

MYRICA. Staminate flowers—ament oblong: calyx an ovate lunulate scale: corol 0: stamens 4 to 6; anthers 4-valved. Pistillate flowers—calyx and corol like the staminate: stigmas 2: drupe or berry 1-seeded. 50. 99—(bayberry, sweet-gale.) *S.*

VISCUM. Staminate flowers—calyx 4 parted: corol 0: anthers sessile, adhering to the calyx. Pistillate flowers—calyx 4-leaved, superior: corol 0: style 0: berry 1-seeded, globose: seed cordate: (parasitic, adhering to trees.) 43. 58—(misseltoe.) *S.*

Southern.

MACLURA. Staminate flowers—[not examined.] Pistillate flowers—calyx none: corol none; style 1, filiform, villous: germs numerous, becoming a berry-like aggregate, many-celled, 1-seeded: seed obovate, compressed. 53. 98.

BROUSSOFETIA. Staminate flowers—ament cylindrical: calyx 4-parted. Pistillate flowers—ament globose: calyx tubular, 3 or 4-toothed: germ becoming fleshy, clavate, prominent: style lateral: seed 1, covered with the calyx. 53. 98—(paper mulberry.)

ORDER V. PENTANDRIA.

NYSSA. Perfect flower—calyx superior, 5-parted: corol 0: pistil 1: fruit a drupe, nut 1-seeded. Staminate flowers—stamens 5 to 12, standing around a peltate gland. 12. 24—(tupelo tree, pepperidge.) *S.*

HAMILTONIA. Perfect flowers—calyx sub-campanulate, superior, 5-cleft: corol 0: nectary with a 5-toothed disk: stamens 5: pistil 1: fruit a drupe. Staminate flowers like the perfect, except in wanting the pistil. 43. 95—(american oil-nut.) *S.*

ZANTHOXYLUM. Staminate flowers—calyx 5-parted: corol 0: stamens 3 to 6. Pistillate flowers—pistils 3 to 5: capsules equal to the number of pistils, 1-seeded. 46. 94—(prickly ash, or tooth-ache tree.) *S.*

ACNIDA. Staminate flowers—calyx 5-parted: corol 0. Pistillate flowers—calyx 3-parted; style 0: stigmas 3, sessile: capsule 1-seeded. 53. 29—(water hemp.) *S.*

HUMULUS. Staminate flowers—calyx 5-leaved: corol 0: anthers with 2 pores at the extremity. Pistillate flowers—calyx 1-leafed, entire, oblique,

spreading: styles 2: seed 1, within the leaf-like calyx: inflorescence strobile-form. 53. 98—(hop.) *S.*

Exotic.

CANNABIS. Staminate flowers—calyx 5-parted. Pistillate flowers—calyx 5-leaved, entire, gaping laterally: styles 2: nut 2-valved, within the closed calyx. 53. 98—(hemp.)

SPINACIA. Staminate flowers—calyx 5-parted: corol 0. Pistillate flowers—styles 4: seed 1, within the indurated calyx. 12. 29—(spinach.)

Southern.

IRESINE. Staminate flowers—calyx 2-leaved: petals 5; nectaries 5 or 7. Pistillate flowers—stigmas 2, sessile: capsule many-seeded, becoming downy. 12. 30.

ORDER VI. HEXANDRIA.

SMILAX. Staminate flowers—calyx 5 or 6-leaved, inferior: corol 0: anthers adhering to the filaments. Pistillate flowers—calyx and corol like the staminate: styles minute; stigmas 3: berry 3-celled, 1 to 3-seeded. 11. 12—(green briar, jacob's ladder.) *S.*

DIOSCOREA. Staminate flowers—calyx 6-parted: corol none. Pistillate flowers—styles 3: capsule 3-celled, triangular, compressed: seeds 2, membranaceous. (Leaves generally alternate.) 11. 12—(yam-root.) *S.*

GLEDITSCHIA. Perfect flowers—calyx 6 to 8-parted, caducous, 3 or 4 of the outer segments smaller: corol none: stamens 5 or 6 (rarely 8:) legume long, flat, compressed, 1 or many-seeded. Staminate flowers—calyx sub-turbinate, 5 to 8-parted, with 3 to 5 of the segments interior: stamens 6 to 8. 33. 93—(honey locust.) *S.*

ORDER VIII. OCTANDRIA.

POPULUS. Staminate flowers—ament cylindric, calyx a torn scale: corol turbinate, oblique, entire, supporting 8 to 30 stamens. Pistillate flowers—ament, calyx and corol like the staminate: stigma 4 or 6-lobed: capsule 2-celled, 2-valved, many-seeded: seed with egret-like hairs. (Leaves having a tremulous motion.) 50. 99—(poplar, balm of gilead.) *S.*

DIOSPYROS. Staminate flowers—calyx 4 to 6-cleft, dilated: corol pitcher-form, 4 to 6-cleft: stamens 8, 16 or 24: often 2 anthers to a filament. Pistillate flowers—calyx and corol like the staminate: stigmas 4 or 5: berry 8 to 12-seeded. 18. 50—(date plum.) *S.*

HIPPOPHAE. SHEPHERDIA. Staminate flowers—calyx 4-parted, caducous, tubular: corol 0: stamens 8, enclosed, alternating with 8 glands. Pistillate flowers—calyx 4-cleft, bell-form, superior: style 1; stigma oblique: berry 1-seeded. 16. 24—(sea-buckthorn.)

ORDER IX. ENNEANDRIA.

SERPICULA. UDORA. ELODEA. The perfect flowers have 3 stamens only. Staminate flowers—calyx 3-parted: corol 3-petalled: stamens 9, 3 of them within. Pistillate flowers—calyx 3-parted; tube very long: petals 3: barren filaments 3: capsule bladder-like, 3-seeded; seeds cylindrical. 15. 63—(ditch-moss.) *S.*

Southern.

HYDROCHARIS. Staminate flowers—spathe 2-leaved; perianth 3-parted; corol 3 petalled: styles 3, all abortive. Pistillate flowers—spathe, perianth and petals, like the staminate and superior: stigmas 6, 2-cleft: stamens 3, barren: 3 nectariferous glands: capsule 6-celled, many-seeded. 1. 22—(frog-bit.)

Order X. Decandria.

Gymnocladus. Staminate flowers—calyx tubular, 5-cleft: corol 5-petalled. Pistillate flowers—same as the staminate: style 1: legume 1-celled, pulpy within: seed roundish, large and hard. 33. 93—(coffee-bean.)

Southern.

Carica. Staminate flowers—calyx minute or obsolete: corol 5-cleft, funnel-form: filaments alternately shorter, enclosed in the tube of the corol. Pistillate flowers—calyx 5-toothed: corol 5-petalled: stigmas 5: berry (cucumber-form) grooved, 1-celled, many-seeded. 38. 97—(false papaw tree.)

Order XII. Polyandria.

Menispermum. Staminate flowers—calyx 6-leaved, somewhat 2-bracted, caducous: petals 6 to 9, glandular, minute, retuse: stamens 16, 20 or 24: anthers 4-lobed, 2-celled, adnate to the filaments. Pistillate flowers—calyx and corol like the staminate: germs and styles 3 to 6: drupes or berries mostly solitary, 1-seeded: nut woolly, lunulate, compressed. 11. 77—(moon-seed.) *S.*

Datisca. Staminate flowers—calyx 5-leaved: corol 0: anthers sessile, about 15. Pistillate flowers—calyx superior, 2-toothed: styles 3: capsules 3-angled, 3-horned, 1-celled, many-seeded, pervious. 54. 98?—(false hemp.)

Southern.

Zamia. Ament a strobile. Staminate flowers—calyx consists of obovate scales: corol none: anthers globose, sessile upon scales, opening by a fissure. Pistillate flowers—calyx consists of peltate scales: corol none: germs 2; styles none: berries 2, 1-seeded. 1. 11.

Order XV. Monadelphia.

Juniperus. Staminate flowers—ament ovate, whorled: calyx a peltate scale: anthers 4 to 8. Pistillate flowers—calyx 3-parted: petals 3: styles 3: berry 1 or 2-seeded, consisting of the unequal tubercles of the calyx. (Nut bony, 1-celled, with balsamy glands at the base.) 51. 100—(red cedar, savin.) *S.*

Taxus. Staminate flowers—calyx consists of 4 to 6 imbricated scales: corol 0: stamens many, 3 to 10: anthers peltate, 6 to 8-cleft. Pistillate flowers—style 0: receptacle cup-form, succulent; nut or drupe fleshy, open at the extremity, 1-seeded. 51. 100—(yew.)

CLASS XXI. CRYPTOGAMIA.

Order I. Filices.

A. *Capsule having an elastic ring at right angles with its opening.*

Polypodium. Capsules disposed in round scattered fruit dots, (or clusters of capsules,) on various parts of the lower surface of the frond: involucre none. 55. 5—(polypod.) *S.*

Acrostichum. Capsules numerous, covering the whole lower surface of the frond: involucre none. (The fertile leaves differ in shape from the barren. This genus should be examined in the young state; for the scattered fruit of other genera, by becoming confluent when old, often cover the frond.) 55. 5—(fork-fern.) *S.*

Hypopeltis. Fruit-dots roundish, having a cup-form involucre beneath, divided into 5 or 6 irregular segments: capsules all sessile. 55. 5.

Woodsia. Involucre beneath, perianth-form, with a hair-like margin: capsules pedicelled, included within the involucre: fruit-dots roundish, scattered. 55. 5—(flower-cup fern.) *S.*

ASPIDIUM.* Capsules in scattered roundish fruit-dots on various parts of the whole lower surface of the frond: involucre a kidney-form or round membrane, fastened to the frond in or near the centre of the fruit-dot, and opening on all sides, or to one side of the fruit-dot, and opening on the other. (The involucre, when a little opened, is often peltate.) 55. 5—(shield-fern.) *S.*

ASPLENIUM. Capsules in lines parallel to each other, situated exactly *upon* the secondary veins of the frond: involucres opening inwards. (By the secondary veins is meant those of the middle part of the disk, not the larger ones at the margin or midrib. The parallel lines of capsules may stand obliquely with respect to the midrib, but their direction must be parallel to each other. 55. 5—(spleen-wort, walking-leaf.) *S.*

SCOLOPENDRIUM. Capsules in strait or zigzag parallel lines *between* the secondary veins (or ribs) of the frond: involucre double, opening on the top of the lines of capsules, and folding down towards each side. (In the genus *asplenium*, the lines of capsules lie across the veins of the frond; but in this they are in line with the veins, and attached along their sides or between them.) 55. 5—(caterpillar fern.)

BLECHNUM. Capsules in uninterrupted lines running parallel to the midrib of the frond on both sides: involucre opens inwards. (The fruit of this genus, when ripe, often covers the whole lower surface of the frond, like the *acrostichum*; it must therefore be examined in the young state.) 55. 5—(roman fern.) *S.*

WOODWARDIA. Capsules in oblong or oval spots, arranged in regular rows on both sides of, and parallel with, the ribs: involucre vaulted, and opening inwards. (When the leaves have large segments, the capsules are arranged along the midribs of the segments.) 55. 5—(kidney-fruit fern.) *S.*

PTERIS. Capsules arranged in a continued line along the very margin of the frond: involucres opening inwards, being formed of the inflexed margins of the fronds. (When the leaves are extremely small, the rows of capsules on opposite sides meet and cover the lower surface.) 55. 5—(brake.) *S.*

ADIANTUM. Capsules disposed in oblong fruit-dots, arranged along the margin of the frond: involucre is formed by turning back the margin of the frond over the capsules, and it opens inwards. (The lines of oblong spots are generally along that margin, which may be considered the end of the leaf, or of the segments of the leaf.) 55. 5—(maidenhair.) *S.*

DICKSONIA. Capsules in small round scattered fruit-dots at the margin of the frond: involucre double; one part is formed of the thin margin of the frond, turned over upon the fruit-dots, the other is from the frond on the inward side of the fruit-dots, each part opening opposite to where it is fastened to the frond. 55. 5—(mountain fern.) *S.*

CHEILANTHES. Fruit-dots roundish, punctate, distinct, situated at the margin of the frond: involucre a roundish membrane, formed by turning over the margin of the frond upon the fruit-dots, and opening inwards (The margin is always crenate, and each fruit-dot has its own involucre perfectly separate from the others.) 55. 5—(lip-fern.) *S.*

HYMENOPHYLLUM. Fruit-dots marginal; the capsule sessile, inserted on a common cylindrical receptacle, within a 2-valved involucre of the same texture as the frond-valves have; exterior free. 55. 5. *S.*

ONOCLEA. Fruit-dots indeterminate, presenting a berry-like appearance; capsules covering the whole lower surface of the frond: involucre formed by turning in or rolling back the margin of the leaf, which opens inwards, in maturity, towards the midrib, or remains closed. (The fertile leaves are contracted and narrower than the barren ones.) 55. 5—(sensitive polypod.) *S.*

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* The genus Athyrium is re-united to the Aspidium, in accordance with Dr. Torrey's views. The mere fastening of the involucre on one side of the fruit-dot, and opening on the other, not being sufficient for dividing a natural genus.

STRUTHIOPTERIS. Capsules covering the back of the frond very densely: involucre scale-like, marginal, opening inwards. 55. 5.

Southern.

VITTARIA. Fruit-dots linear, continued longitudinally along the disk or towards the margin of the frond: involucre double, uninterrupted; one opening outwards, the other inwards. 55. 5.

B. *Capsule without a ring—being cellular-reticulate, pellucid, sub-striate, radiate at the tip.*

OSMUNDA. Capsules globose, pedicelled, radiate-striate or wrinkled, having a hinge at the joining of the two valves, which resembles part of the jointed ring of annulated ferns: the capsules either occupy the whole frond, to a limited extent, or a panicled raceme. (The parts of the frond occupied by the fruit are always more contracted than the barren parts.) 55. 5—(flowering fern.) *S.*

SCHIZÆA. Capsules top-form, partly opening by an oblong lateral pore; striate longitudinally and radiately, situated upon the back part of a narrow spike-form appendage of the frond, surrounded with, or interspersed among, bundles of hairs. (The appendages, bearing the capsules, are generally digitate, and occupy the summit of the frond.) 55 5—(one-sided fern.)

LYGODIUM. Capsules covered with a scale-like veil, in two series, radiate-striated or wrinkled, opening on the inner side from the base to the summit; they are situated upon spikelets which proceed from the margin of the frond, each capsule being hid under a scale which falls off frequently in ripening: spikelets mostly unilateral. 55. 5—(fringed fern, climbing fern.) *S.*

C. *Capsule without a ring—being adnate at the base, sub-globose, coriaceous, not cellular, somewhat 2-valved.*

OPHIOGLOSSUM. Capsules round, 1-celled, opening transversely; they are placed on a somewhat jointed spike in two close rows. 55. 5—(adder-tongue fern.) *S.*

BOTRYCHIUM. Capsules coriaceous, globose, 1-celled, smooth, adnate to each rachis, of a compound raceme, (panicle,) separate, valves 2, connected behind, opening transversely. 55. 5—(grape fern.) *S.*

Southern.

PSILOTUM. BERNHARDIA. Capsules 3-grained, 3-celled; cells opening above, half 2-valved: fruit in spikes. 55. 5. *S.*

D. *Sub-order,* APTERES—*without pinnate, pinnatifid, or other winged, leaves.*

LYCOPODIUM. Capsules mostly kidney-form or roundish, 2 or 4-valved, opening elastically; they are placed under separate scales in a spike, or sometimes in the axils of leaves. (Very leavy, their stems being generally covered with 2, 3, or 4 rows of narrow, simple, entire leaves. 55. 5—(ground-pine.) *S.*

EQUISETUM. Fruit placed under peltate polygons, being pileus-like bodies, which are arranged in whorls, forming a spike-form raceme; 4 to 7 spiral filaments surround the seed (probably.) which resemble green globules. (Fertile plants mostly leafless: the stems of all are jointed with toothed sheaths at every joint, and usually longitudinally striated and hollow.) 55. 5—(scouring rush, horsetail). *S.*

ISOETES. Capsules membranaceous, 1-celled, not dehiscent: fruit-dots heart-ovate, immersed in a swelling, or tuberosity, at the base of the linear, sub-articulate, grass-like frond: seed angular, attached to numerous cross-bars within the capsule. 55. 5—(quill-wort.)

AZOLLA. Monoecious. Staminate? appendages by pairs, contiguous: involucre sub-globose, resembling a 1-celled capsule: seeds numerous, naked. 55. 5. *S.*

Salvinia. Involucre imbricate, 4 to 9, connate, resembling a 1-celled capsule: seeds inserted on a central receptacle. 55. 5.

Remarks. Thus far the North American genera are well ascertained and described in the various floras. But the remaining five orders of the class Cryptogamia, require much additional labour. The *Fungi* and *Hepaticae* have received great acquisitions from Schweinitz—the *Musci* and the *Lichenes* are rapidly advancing in the hands of Halsey and Torrey—the *Algae* of our country are still in darkness.

On account of the unexamined state of these five orders, I shall not give any localities for the genera.

Order II. Musci.*

First division. Capsules without peristomes.

Sphagnum. Base of the calyptre remains attached to the capsule, after the upper part has fallen off. 56. 4.

Phascum. Capsule terminal, without an opening: calyptre bell-form, halved, subulate, minute. 56. 4.

Gymnostomum. Capsules terminal: calyptre cowled or halved, subulate, caducous. 56. 4.

Schistidium. Capsule terminal: calyptre mitre-form or bell-conic, split at the base into many sub-equal divisions. 56. 4.

Anœctangium. Capsule lateral: calyptre halved, subulate. 56. 4.

Second division. Capsules with peristomes.

A. *Mouth surrounded by a single peristome: fruit terminal.*

1. *Teeth solitary, free* (disconnected) *at the base, entire.*

Tetraphis. Teeth of the peristome 4, pyramidal: calyptre mitre-form, split into many divisions at the base. 56. 4.

Grimmia. Teeth of the peristome 16, pyramidal, easily reflexed: calyptre mitre-form. 56. 4.

Weissia. Teeth of the peristome 16, erectish, narrow, imperforate: calyptre halved, subulate. 56. 4.

Trematodon. Teeth of the peristome 16, lance-linear, perforate: germ nodding, with a long horn-like epophysis at the base: calyptre cowled. 56. 4.

2. *Teeth solitary, free at the base, split from the apex towards the base.*

Dicranum. Teeth of the peristome 16, inflexed, 2-cleft, the divisions equal: calyptre hood-form. 56. 4.

Campylopus. Teeth of the peristome 16, 2-cleft, sub-perforate: calyptre mitre-form, torn-fringed at the base. 56. 4.

Racomitrum. Teeth of the peristome split even to the base into 2, 3, or 4 parts; division equal, filiform: calyptre mitre-form or bell-form, and subulate, mostly torn at the base. 56. 4.

Trichostomum. Teeth of the peristome 16, split even to the base into 2, 3, or 4 parts; divisions filiform: calyptre halved, hood-form. 56. 4.

Calymperes. Teeth of the peristome 16, short, split; mouth closed by a spongy membrane: calyptre large, mitre-form, involving the capsule; at length laterally split. 56. 4.

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* Arranged, with few exceptions, according to the Methodus Muscorum A Sam. Eb a Bridel.

Mosses may be gathered whenever the capsules have arrived to their usual size; but they must be put in a closet, until the lids of the capsules become reddish-brown, before they are examined; then the lids may be removed, and the teeth examined.

3. Teeth solitary, twisted together like a rope at the top.

BARBULA. Teeth of the peristome 16 or 32, capillary, somewhat connected at the base, and spirally twisted at the top: calyptre hood-form. 56. 4.

SYNTRICHIA. Teeth of the peristome 16 or 32, twisted spirally in the form of a spike, and arising from a broad reticulate membrane: calyptre hood-form. 56. 4.

4. Teeth approach each other, or unite in pairs.

DIDYMODON. Teeth of the peristome 32; they approach each other in pairs, but remain distinct: calyptre hood-form. 56. 4.

SPLACHNUM. Teeth of the peristome 16, attached to each other in pairs, so that they can hardly be separated without lacerating their cuticles; reflexed, and at length close pressed to the back of the capsule; the capsule has an apophesis: calyptre bell-form, with a sub-lacerated base. 56. 4.

B. *Mouth sorrounded by a double peristome*, (except 2 species of Orthotrichum:) *fruit terminal.*

ORTHOTRICHUM. Peristome single or double. *When single*, the teeth are 16, arranged in pairs: after the falling of the lid they are reflexed. *When double*, the outer teeth are as when single, and the inner teeth are 8 or 16, linear, distant: calyptre conic or bell-form, keeled, pilose upwards; rarely glabrous. 56. 4.

ULOTA. Teeth of the outer peristome 16, arranged in pairs; after the falling of the lid they are easily reflexed: teeth of the inner peristome are 8, linear, distant: calyptre conic, smoothish, hairy above, often split into a fringe at the base. 56. 4.

BARTRAMIA. Teeth of the outer peristome 16, wedge-form; the inner peristome consists of a membrane folded into 16 carinate plaits or folds; the divisions are bifid, receiving the inflexed apexes of the teeth: calyptre hooded. 56. 4.

BRYUM. Teeth of the outer peristome 16, broadish, acute; the inner peristome consists of a membrane, divided or folded by keel-like furrows, and extended into 16 broadish processes, with ciliate hairs interposed: calyptre hood-form: capsule equal. 56. 4.

ARRHENOPTERUM. Teeth of the outer peristome 16, broadish, acute; the inner peristome consists of a keel-furrowed membrane, split into broad processes, with ciliate hairs interposed: calyptre oblong, laterally sessile: capsule unequal, arcuate, nodding. 56. 4.

MNIUM. Teeth of the outer peristome 16, broadish, ascending or erect, with very long apexes arching outwards; the inner peristome consists of a membrane extended into 16 perforated or forked divisions, ciliate hairs interposed: calyptre acutely conic: capsule unequal, nodding. 56. 4.

TIMMIA. Teeth of the outer peristome 16, broadish, acuminate; the inner peristome consists of a membrane torn into 16 divisions, opposite to the teeth, irregularly perforated and anastomosing, rarely the divisions are alternately free: calyptre laterally fissile. 56. 4.

DIPLOCOMIUM. Teeth of the outer peristome 16, obtuse, short; the inner peristome consists of 16 ciliate hairs approaching each other in pairs, not connected by any membrane. 56. 4.

MEESIA. Teeth of the outer peristome 16, short; the inner peristome consists of ciliate hairs connected wholly by net-work. 56. 4.

DIPHYSCIUM The outer peristome seems as if almost obliterated; it consists of 16 very minute scales surrounding the mouth of the germ; the inner peristome consists of a conic truncate membrane, in 16 plicate folds, which alternate with the scales. 56. 4.

BUXBAUMIA. Peristomes three. Teeth of the outer peristome 16, truncate, very short, unequal, fugaceous: the two inner peristomes consist of sub-conical membranaceous cylinders, constructed of filaments laterally adhering together,

and torn at the top; the innermost is the longest, folded in 16 plaits, and dehiscent at the apex. 56. 4.

Funaria. Teeth of the outer peristome 16, cohering together at the apex, and twisted obliquely: the inner peristome consists of 16 membranaceous cilia, opposite to the teeth, lying flatly. 56. 4.

C. *Mouth surrounded by a single peristome; fruit lateral.*

1. *Teeth entire.*

Pterigynandrum. Teeth of the peristome 16, equally distant, acute, erectish: calyptre hood-form, glabrous. 56. 4.

Lasia. Teeth of the peristome 16, equally distant, acute, erect: calyptre hood-form, pilose above. 56. 4.

2. *Teeth split.*

Leucodon. Peristome a membrane divided into teeth, each of which is split almost to its base: calyptre hood-form. 56. 4.

D. *Mouth surrounded by a double peristome: fruit lateral.*

1. *Teeth of the inner peristome free at the base.*

Neckera. Teeth of the outer peristome 16, erect, free; cilia of the inner peristome alternate with the teeth, (rarely opposite:) calyptre hood-form, glabrous. 56. 4.

Cryphæa. Teeth of the outer peristome 16, erect, free; cilia of the inner peristome alternate with the teeth: calyptre mitre-form or conic, glabrous. 56. 4.

Pilotrichum. Teeth of the outer peristome 16, erect, free; cilia of the inner peristome alternate with the teeth: calyptre mitre-form or conic, hirsute. 56. 4.

2. *Teeth of the inner peristome connected by a membrane at the base.*

Climacium. Teeth of the outer peristome 16, acute; inner peristome consists of cilia, arising from a very short membrane, which are united at the apex in pairs by transverse bars. 56. 4.

Leskia. Teeth of the outer peristome 16, subulate, inflexible; inner peristome consists of a membrane extended into 16 linear, uniform processes: calyptre hood-form. 56. 4.

Pterigophyllum. Teeth of the outer peristome 16 lance-linear; inner peristome consists of a membrane split into 16 linear, uniform, (rarely deformed) processes: calyptre mitre-form, entire, glabrous. 56. 4.

Hypnum. Teeth of the outer peristome 16, acute, reflexile; inner peristome consists of a membrane extended into 16 processes, with smaller capillary ones interposed: calyptre hood-form, glabrous. 56. 4.

3. *Inner peristome without teeth or cilia.*

Fontinalis. Teeth of the outer peristome 16, broadish, acute, erect; inner peristome a reticulate conic membrane. 56. 4.

E. *Mouth surrounded by a single peristome; fruit arises from the duplicature of a leaf.*

Fissidens. Peristome simple: teeth 16, 2-cleft, broadish, inflexed; the divisions somewhat unequal, diverging. 56. 4.

F. *Mouth closed by a horizontal membrane.*

Polytrichum. Peristome very short; teeth 16, 32, or 64: mouth of the germ covered by a dry membrane, which is connected to it by the teeth of the peristome: calyptre very small, with a large villose or hairy covering. 56. 4.

Catharinæa. Peristome very short; teeth 32 or 64: mouth of the capsule covered by a dry membrane: calyptre glabrous or hirsute, with scattering hairs. 56. 4.

Order III. Hepaticæ.*

Riccia. Capsules sub-globose, imbedded in the frond, not dehiscent, furnished with a short tube, scarcely prominent, becoming brownish and perforated at the apex. This aquatic genus has the habit of the most succulent and tender lichens. 57. 3.

Blazia. Capsule 1-valved, with no elevations of the seeds upon the columella (as in Anthoceros,) crowned with a tube opening outwardly at the apex. 57. 3.

Sphaerocarpus. Calyxes numerous, large, fascicled in a minute frond, globe-turbinate, reticulate, sub-diaphonous, perforated at the apex, including the capsule: capsule sessile in the bottom of the calyx, spherical; seeds numerous, globe-lens-form, surface granulated and sharply muricate: frond reticulate, sub-diaphonous, of the substance of the calyx, and very green. 57. 3.

Carpobolus. Capsules oblong-spheroid, compressed, tapering, cleft or dehiscent at the apex; seeds minute, globose, free among each other: calyx largeish, 2-cleft: frond orbicular-oblong; folds converging towards a centre; margins elevated, crenate. 57. 3.

Anthoceros. Capsules long, horn-form, subulate, longitudinally dehiscent into 2 valves when mature, imbedded and nourished in a linear fleshy receptacle; after the opening of the capsule, seeds appear attached to a columella. Around the fleshy receptacle, (or perhaps calyx,) within the substance of the frond, appear heaps of reddish bodies resembling anthers. The substance of the frond is made up of hexahedral cells. In habit this genus resembles mosses. 57. 3.

Marchantia. Receptacles pedicelled, radiate-lobed, disk-like or bell-form, with the inside downwards, to which the globose 4-valved capsules are attached, with their apexes downwards. The umbrella-like receptacle is elevated one or two inches by a stipe attached to the centre of its lower side, among the capsules and many pilose appendages. The frond is leafy, reticulate, furnished with a midrib, and beset with villose roots on the under side, which attach themselves to the stones in brooks, to damp earth, &c. 57. 3.

Jungermannia. Capsules 4-valved, globose, elevated by peduncles or stipes from within a bell-form calyx. The fronds are made up of finer leaves than those of the Marchantia, and are often mistaken for mosses, among which they generally grow. 57. 3.

Order IV. Algæ.†

A. *The section* Fucoideæ *comprises those sea-weeds of the old genus Fucus, whose fronds are cartilaginous or leathery, and of an olive or copper colour, becoming brown or black. They are composed of interwoven longitudinal fibres. The floating vesicles appear like portions of the frond blown up in bubbles.*

Fucus. Receptacles tubercled; the tubercles perforated, nourishing aggregated capsules within, intermixed with articulated fibres. 57. 2.

Chordaria. The fruit consists of immersed, clavate, articulated, concentric threads, passing into seeds. Fronds filiform, cartilaginous and lubricous. 57. 2.

Laminaria. Seeds oblong, immersed in a distinct part of the frond—never in all parts. Frond a tenacious cartilage. 57. 2.

B. *The section* Florideæ *comprises those sea-weeds of the old genus Fucus, whose fronds are leathery, membranous or gelatinous, and of a purple or rose colour.*

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* From Sprengel, De Lamark and De Candolle.

† Translated from Agardh's Synopsis Algarum—omitting all which is not required by discoveries in our district.

Delesseria. Fruit double, seeds and capsules. Seeds heaped together in spots, immersed in the leaves in various places. Frond always thin and membranaceous. 57. 2.

Sphærococcus. Fruit uniformly a capsule, sessile in the disk of the frond, or pedicelled at the margin. Frond cartilaginous, nerveless, flat or filiform. 57. 2.

Halymenia. Frond membranaceous, leathery, nerveless, punctate: seed immersed throughout the whole frond, disposed in spots. 57. 2.

C. *The section* Ulvoideæ *comprises the plants of the old genus Ulva. Fronds membranaceous* (broad, or in narrow slips,) *thin, of a grass-green colour. Their substance consists of cells, with the fruit immersed in the frond.* They grow on rocks, stones, shells, &c. in the sea; also in ditches, stagnant waters, damp woods, &c. 57. 2.

Ulva. Seeds in fours, immersed in every part of the membranaceous frond. 57. 2.

Vaucheria. Fruit consists of minute homogeneous vesicles strung on a thread, or the threads or fibres sprinkled over with green granular masses, which may at length be easily brushed off. Linneus denominated the plants of this genus amphibious confervæ; because they rise to the surface of water, and project their fructiferous filaments above it. 57. 2.

D. *The section* Confervoideæ *comprises the plants of the old genus Conferva. Fruit capsular or naked granulations. Fronds filiform and geniculate, containing the fruit immersed in them, generally strung on threads; mostly of a grass-green or greenish colour, sometimes purple.* They grow in fresh water streams, springs, ditches, and stagnant waters; sometimes in damp woods, and some in the sea.

Hutchinsia. Fruit double, capsular and filamentose granulations. Capsules ovate, broader at the base, acuminate apex, (sometimes truncate,) sessile, reticulate, containing globules in inflated branches. Filaments formed from numerous channels, of a purplish colour. 57. 2.

Ceramium. Fruit double, filamentose and capsular. Filaments constituted from one tube. 57. 2.

Lamania. Filaments torose, rigid, containing the seed within them. The chain of germs is affixed to the interior disk of the membrane, in a pencil-form aggregate. 57. 2.

Conferva. Filaments articulated, uniform, simple or branched; containing the seed within them. No external fruit. 57. 2.

Zygnema. Filaments simple, equal, articulated, green, gelatinous: articulations hyaline; granulations disposed in spiral lines or in double stars, rarely scattered. At length the transverse tubes burst in the middle of the joints, and from the two nearest filaments is transmitted, at the same time, a green substance, which uniting, forms a spherical or oval seed. 57. 2.

Oscillatoria. Filaments continued, membranaceous, gelatinous: germs ring-form, transverse, parallel, crowded. Agardh considers some of the species of this genus as intermediate between animal and vegetable, though their oscillatory motions cannot be voluntary. 57. 2.

Batrachospermum. Frond gelatinous. Filaments with the main part articulated; branches whorled at the articulations: fruit external. 57. 2.

E. *The section* Tremellinæ *comprises the old genus Tremella. Plants of this section are all gelatinous, hyaline, and covered with a membrane. They are globose, palmate, or filiform; and contain conferva-like filaments within. Colour green or purplish. They resemble Confervoideæ in habit and place of growth.*

Rivularia. Filaments simple, continued, annulated within, terminating in a distinct globe at the base, produced at the apex into a long hyaline point. Colour olive, or dark green. 57. 2.

NOSTOC. Filaments monili-form, constituted from coadunate globules. Frond bullate, vesicular, (at length becoming flattened,) crowded with simple, monili-form, curve-crisped filaments. 57. 2.

ORDER V. LICHENES.*

A. *The Idiothalamous† section comprises those lichens, whose receptacles are wholly of a substance and colour different from that of the frond.*

1. *Receptacle simple, wholly formed of a pulverulent or cartilaginous substance.*

(Receptacles without margins.)

SPILOMA. Frond‡ crustaceous, expanded, flat, adnate, uniform: receptacles (efflorescence) composed of corpuscules, or pulverulent atoms, aggregated in compact, homogeneous, naked, formless (or of various and irregular forms,) coloured masses. 57. 2.

ARTHONIA. Frond crustaceous, flat, expanded, adnate, uniform: receptacle innate-sessile, round-shapeless, dark-coloured, covered with a sub-cartilaginous membrane—resembles a solid parenchymous substance. 57. 2.

(Receptacle margined.)

GYALECTA. Frond crustaceous, flat, expanded, adnate, uniform: receptacle shield-form, urceolate, immersed in the crust, resembling a thin cartilage; the lower part concave, with the aperture contracted and sub-marginated. 57. 2.

LECIDEA. Frond various: crustaceous, expanded and adnate, uniform or disfigured, foliaceous, rope or tow-like: receptacles (spangles) shield-form, sessile, clothed every where with a cartilaginous membrane: somewhat solid, including a parenchymous substance: disk with an uniform or similar margin. 57. 2.

CALICIUM. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (puffs) bowl-form, sessile or stiped, cartilaginous; sustaining a compact, pulverulent mass, flat or sub-globose above, forming a naked disk. 57. 2.

GYROPHORA. Frond foliaceous, coriaceous-cartilaginous, peltate, monophyllous, (when luxurient polyphyllous,) free beneath: receptacles (buttons) somewhat shield-form, sessile-adnate, clothed with a dark membranaceous cartilage, including a somewhat solid parenchymous substance: disk warty or circinal, plicate and margined. 57. 2.

OPEGRAPHA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (clefts) oblong, elongated, sessile, clothed with a dark-coloured cartilaginous membrane, including a somewhat solid parenchymous substance: disk linear, margined both sides. 57. 2.

2. *Receptacles sub-simple, formed from a solitary frond, and furnished with a perianth-like organ, including a nucleus.*

(Receptacles margined.)

GRAPHIS. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (hollows) elongated, immersed in the frond; the perianth-like organs surrounding the seed-cases are simple, cartilagenous, halved, lateral, dark-coloured, margined both sides; nucleus linear: disk naked above and beneath, cellular-striate within. 57. 2.

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* Translated from the last improved Synopsis Methodica Lichenum of Professor Erik Acharius.

† *Idios*, peculiar; *thalamus*, bed.

‡ Acharius has substituted for frond, *universal receptacle*; in his last work throughout.

(Receptacles without margins.)

VERRUCARIA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (hollows) hemispheric or sub-globose, imbedded in the frond at the base; the perianth-like organs surrounding the seed-cases are double; exterior one sub-cartilaginous, thick, dark-coloured, halved above, furnished with little openings or papillose; interior one thin, membranaceous: nucleus sub-globose, cell-vesicular, every part enclosed. 57. 2.

ENDOCARPON. Frond crustaceous, flat, adnate, somewhat deformed, or foliaceous and peltate: receptacles (hollows) globose, hidden in the substance of the frond; the perianth-like organs surrounding the seed-cases are simple, membranaceous, thin, translucent; the little openings at the surface of the frond are thick, sub-papillose, prominent: nucleus a globose substance. 57. 2.

B. *The* CŒNOTHALAMOUS* *section comprises those lichens, whose receptacles are in part only formed from the substance of the frond.*

1. *Receptacles included in warts, which are formed from the frond.*

PORINA. Frond crustaceous, cartilaginous, flat, expanded, adnate, uniform: receptacles (hollows) single, or many together hidden in verrucose enclosures, which are formed from the frond, and are without margins; the perianth-like organs surrounding the seed-cases are simple, tender, membranaceous, translucent, furnished with coloured openings, thicker at the surface of the warts, and including sub-globose cellular vesicles. 57. 2.

PYRENULA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (hollows) single, enclosed or surrounded at the base by warts, formed from the frond; the perianth-like organs are simple, thick, dark-coloured, papillose, investing the whole cellular globose nucleus. 57. 2.

VARIOLARIA. Frond crustaceous, flat, expanded, adnate, uniform: the receptacle is a kind of wart, formed externally from the frond, with a white border or margin: nucleus naked, (without the perianth-like organ,) compressed, cellular, hidden within the substance of the wart, veiled above, but at length naked. 57. 2.

2. *Receptacles shield-form, sub-sessile, furnished with a disk of a peculiar substance and colour, and surrounded by a margin of a different colour, proceeding from the frond.*

URCEOLARIA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles (shields or spangles) concave, seed-bearing lamina, coloured, striate, cellular within, immersed in the substance of the crust or in warts, surrounded with margins formed from the frond, and of the same colour, sessile or elevated. 57. 2.

LECANORA. Frond crustaceous, flat, expanded, adnate, uniform: receptacles shield-form, thick, adnate-sessile: seed-bearing lamina forming the disk, plano-convex, coloured, covering the receptacle above, cellular-striate within, surrounded with a thickish margin formed from the frond and of the same colour, somewhat free. 57. 2.

PARMELIA. Frond coriaceous, sub-membranaceous, flat, expanded, close-pressed, orbicular, stellate and lobed, or multifid-laciniate, having fibres beneath: receptacle shield-form, sub-membranaceous, formed under-side from the frond, free, with a central puncture by which it is affixed; seed-bearing lamina forming the disk, concave, coloured, covering the whole receptacle above, within similar, sub-cellular and striate, cut round, inflexed with a frond-like margin. 57. 2.

BORRERA. Frond cartilaginous, lacinate-branched; divisions free, often channelled beneath and ciliate at the margin: receptacles shield-form, thick, formed form the frond beneath; seed-bearing lamina forming the disk, colour

* *Koινος*, common; *thalamos*, bed.

ed, similar within or vesicular, surrounded by a frond-like margin, elevated, inflexed. 57. 2.

Cetraria. Frond cartilaginous or membranaceous, ascending or expanded; lobe-laciniate, smooth and naked both sides: receptacles (targets) shield-like, obliquely attached to the margin of the frond, the lower free, being separated from it, the upper one sessile; seed-bearing lamina forming the disk, coloured, plano-concave, within similar or cellular-striate, surrounded with a frond-like inflexed margin. 57. 2.

Sticta. Frond foliaceous, coriaceous, cartilaginous, expanded, lobed beneath, free and villose, with pits interspersed: receptacles shield-form, formed from the frond beneath, with a central puncture to which it is affixed and close-pressed: seed-bearing lamina forming the disk, coloured, flat, cellular-striate within, surrounded by a frond-like margin. 57. 2.

Peltidea. Frond foliaceous, coriaceous, expanded, sub-adnate, lobed, woolly-veined beneath: receptacles formed beneath from the extended, ascending, proper lobes of the frond; seed-bearing lamina orbicular, wholly from the frond, sub-oblique, (inferior segment more elevated,) cellular-striate within, adnate, coloured, flat, surrounded by a frond-like margin, which is thin, elevated, approximating on all sides. 57. 2.

Nephroma. Frond foliaceous, coriaceous, membranaceous, expanded, lobed, free and naked, or sub-villose beneath: receptacles up-side down, formed above from the extended, ascending, proper lobes of the frond: seed-bearing lamina reniform, wholly from the frond and its back-surface, adnate, coloured, flat, cellular-striate within, guarded around by a frond-like margin, approximate-inflexed above, more remote and somewhat elevated beneath. 57. 2.

Evernia. Frond sub-crustaceous, laciniate-branched, angled or flat-compressed, erectish or pendulous, rope or tow-like within: receptacle shield-like, sessile, elevated all around; seed-bearing lamina forming the disk, thin, concave, coloured, similar within, inflexed, with a frond-like margin. 57. 2.

3. *Receptacles without margins, sub-globose, formed from the frond above or under side; inserted on the branchlets or terminal processes, or scattered and sessile.*

(Receptacles covered above with seed-bearing lamina.)

Cenomyce. Frond crusty or cartilaginous, foliaceous, laciniate, sub-imbricate, free, (rarely adnate;) bearing sub-fistulous peduncles *(podetia,)* both barren and fertile: receptacles (knobs) orbicular, without margins, at length convex and capitate, inflated or empty beneath, terminal, attached to the peduncles by their peripheries; seed-bearing lamina forming the receptacle above thickish, coloured, similar within, convex, reflexed and attached at the periphery, invested beneath with the woolly integument of the frond. 57. 2.

Bæmyces. Frond crustaceous, flat, expanded, adnate: bearing soft, solid, fertile peduncles *(podetia:)* receptacles (knobs) capitate, without margins, solid, terminal, sessile on the peduncles; seed-bearing lamina covering the whole receptacle and adnate to it, convex-reflexed, thickish, coloured, similar within. 57. 2.

Isidium. Frond crustaceous, flat, expanded, adnate, uniform, bearing shortish, solid, fertile peduncles *(podetia:)* receptacles (globules) orbicular, convex, at length sub-globose, solid, terminal, sessile on the peduncles; seed-bearing lamina included by the apex of the peduncles, and surrounded by a kind of edging formed from them, convex above, flat and coloured beneath, afterwards prominent, edged around and hemispheric, similar within. 57. 2.

Stereocaulon. Frond cartilaginous or somewhat woody, woody-branched, bark crustaceous and unequal: receptacles (knobs) turbinate, sessile, solid, flat above, edged around, at length globose hemispheres; seed-bearing lamina thick, covering the receptacle above, flat, surrounded by a frond-like edging somewhat equal, at length convex, dilated and covering the edging, reflexed, coloured, similar within, sub-striate. 57. 2.

(Receptacle closed with the substance of the frond, and enclosing a pulverulent mass.)

Rhizomorpha.* Frond cartilaginous, membranaceous, with rope or tow-like fibres within, solidish, somewhat terete, proliferous-branched, creeping, prostrate; receptacles globose, sessile, afterwards conglomerate, formed from the cortical substance of the frond, lacerate-burst, filled with fertile dust. 57. 2.

C. *The* Homothalamous† *section comprises those lichens, whose receptacles are wholly formed from the bark and substance of the frond; being the same, or nearly the same colour.*

1. *Receptacles shield-form, margined, sub-sessile.*

Alectoria. Frond cartilaginous, sub-filiform, rope or tow-like within, sub-fistulous, ramose, prostrate or pendulous: receptacle shield-form, thick, sessile, flattish, margined and convex, wholly formed from the frond, covered with its cortical substance, which is similar within, colour similar. 57. 2.

Ramalina. Frond cartilaginous, rope or tow-like within, solidish, laciniate-branched, suffruticose, and mostly with powdery dots: receptacles shield-form, thickish, sub-peltate, with small foot-stalks, flat, margined, wholly formed from the frond and covered with its cortical substance, colour uniform. 57. 2.

Collema.‡ Frond sub-gelatinous, homogeneous, after drying mostly hard-cartilaginous, polymorphous, (crust-like, foliaceous or in branchlets:) receptacle shield-form, sessile, (rarely elevated on a very short foot-stalk,) margined, formed wholly from the substance of the frond and similar, but the disk becomes coloured on drying. 57. 2.

2. *Receptacle terminal, peltate, nearly destitute of margins.*

Cornicularia. Frond cartilaginous, solidish within, and rope or tow-like, branching, and a little frutescent: receptacles orbicular, terminal, obliquely peltate, formed wholly from the frond, covered all over with its cortical substance and similar, at length convex and sub-inflated, somewhat two-coloured; its periphery sub-marginated, sub-dentate, and at length reflexed. 57. 2.

Usnea. Frond sub-crustaceous, teretish, branched, mostly pendulous; central part hyaline, elastic, composed of fascicles of tubes: receptacles orbicular, terminal, peltate, formed wholly from the frond, covered all over with its cortical substance, similar, nearly of an uniform colour; its periphery destitute of margin, but often surrounded by a ciliate edging. 57. 2.

D. *The* Athalamous‖ *section comprises those lichens, whose receptacles are wanting, or at least not distinguishable.*

Lepraria. Frond crusty-pulverulent, expanded, adnate, uniform: receptacle wanting, or at least unknown. 57. 2.

Remark. Sprengel considers the Lepraria, Spiloma and Variolaria as merely the rudiments of other genera.

Order VI. Fungi.§

A. *Fungus*¶ *closed, or bearing fruit within, mostly with seeds very copious.*

A plant of this section is denominated angiocarpus.

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* Persoon places this root-like lichen under the order Fungi.

† *Omos*, similar; *thalamos*, bed.

‡ This genus is placed between Usnea and Lepraria by Acharius in the natural arrangement; but it stands in this section in his *Conspectus Systematicus*.

‖ *A*, without; *thalamos*, bed.

§ Translated from the Synopsis Methodica Fungorum, of D. C. H. Persoon.

¶ The word *fungus* is used by Persoon to denote the part enclosing the fruit.

1. *Fungus hardish, with a soft internal substance.*

SPHAERIA. Receptacles various: sperules roundish, mostly hollow when dry, filled when moist with a gelly or juicy-gelly, made up from the free capsules. A large genus, comprising 184 species. Plants minute. 58. 1.

STILBOSPORA. Spherules none: capsules or seeds aggregated together in a black substance flowing from branches. 58. 1.

NAEMASPORA. Receptacle none, or manifest and soft: a gelly bursting into hair-like or shaggy forms, (when dissolved it becomes shapeless.) 58. 1.

TUBERCULARIA. Receptacles sub-hemispheric, stipe-form, or wanting: gelatinous substance roundish, compact, mostly reddish, permanent, moist and somewhat flowing. 58. 1.

HYSTERIUM. Receptacle none: the enclosures of the capsules mostly oblong, dehiscent into longitudinal chinks. 58. 1.

XYLOMA. Receptacles (or enclosures of the capsules) various, hard, somewhat fleshy within, continuing closed, or at length bursting in various ways. 58. 1.

2. *Fungus fleshy, stuffed.*

SCLEROTIUM. Stuffed, various in form, similar and smooth within; at length corrugated externally in some. 58. 1.

TUBER. Roundish, fleshy: its substance variegated with seed-bearing veins. 58. 1.

3. *Fungus membranaceous, coriaceous or villose, stuffed with dust within.*

(The seminal dust intermixed with filaments.)

TULOSTOMA. Receptacle pedicelled, opening with a cylindric cartilaginous mouth. 58. 1.

GEASTRUM. Volva thin, evanescent: outer bark of the receptacle split in a stellate form, at length reflexed; mouth mostly pilose. 58. 1.

BOVISTA Receptacle smooth, sessile, outer bark white, resembling a volva: at length irregularly bursting at the top, it becomes evanescent by parts. The seminal dust is yellowish-purple. 58. 1.

LYCOPERDON. Receptacle somewhat caulescent, at length bursting at the top, with scaly warts or prickles scattered over its surface, especially when young. Seminal dust green. 58. 1.

SCLERODERMA. Receptacle with a tesselate, hardish, corky bark, at length bursting irregularly. Seminal dust purple, brown-yellow or rust-colour. 58. 1.

LYCOCALA. Receptacle roundish, membranaceous, smooth; stuffed at first with a pulpy liquescent mass, which at length becomes dust intermixed with scattering distant fibres. 58. 1.

FULIGO. At first pulpy, mostly open, somewhat deformed; externally hardish-fibrous or villose, membranaceous at the base; within cellular-fibrous and pilose, at length crumbling into dust. 58. 1.

PHYSARUM. Receptacle rigid, simple, mostly with small wrinkles, somewhat farinaceous; fibres scattered, reticulate, mostly adnate, concealed. 58. 1.

TRICHIA. Receptacle at length unequally ruptured, permanent: seminal filaments compact, adnate to the receptacle at the base, expanding themselves elastically. 58. 1.

ARCYRIA. Receptacle evanescent to the middle: seminal filaments denundated, overlaid with a calyciform receptacle. 58. 1.

STEMONITIS. Receptacle very thin, somewhat evanescent: seminal filaments reticulate, sub-compact, surrounding and affixed to the columella-like organs. 58. 1.

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or in any manner sustaining it: as the hat of the mushroom to the under side of which the lamellae are attached, the membranous covering of a puff-ball, enclosing the dust-like seeds, &c.—the covering and seeds may be called the fruit.

(Seminal dust naked, or not reticulate with fibres.)

TUBULINA. Receptacles tube-form, connate in a cespitose-form, mostly imposed on an underlaying membrane: seminal dust naked, farinaceous. 58. 1.

MUCOR. Receptacle membranaceous, globose, stiped, at first watery and pellucid, then opake: seeds naked, sub-cohering. Very minute and fugacious. 58. 1.

ONYGENA Receptacle stiped, roundish, dry, permanent: seminal dust cohering, compact, not intermixed with filaments. 58. 1

AECIDIUM Receptacle stemless, manifest, terete, membranaceous, at length ruptured with a dentate mouth; seminal dust farinaceous, naked. Grows on leaves. 58. 1.

UREDO. Receptacle none: seminal dust under the cuticle of leaves and stems, when ruptured it is easily brushed off; the little masses of seeds uniform, mostly globose. 58. 1.

PUCCINIA. Receptacle none: seeds conglomerated in a little head, from terete it is sub-turbinate, caudate, divided by little partitions. Mostly on leaves. 58. 1.

TRICHODERMA. Denudated: seminal dust copious, farinaceous, surrounded with a tomentose or villose integument. 58. 1.

CONOPLEA. Form distinct, byssus-like (flax-like:) filaments permanent, compact, rigid, sprinkled with conspicuous seminal dust. 58. 1.

(Fruit lenticular, fleshy, very manifest.)

CYATHUS. Receptacle funnel-form or cup-form, coriaceous; closed at first with a veil or covering, including within lenticular vessels or seeds. 58. 1.

B. *Fungus fleshy, bearing seeds in some kind of exposed or naked receptacle; as in plates, papillose or aculeate processes, or a spongy substance. A plant of this section is denominated* GYMNOCARPUS.

1. *Receptacles juicy, gelatinous, at length dissolving.*

PHALLUS. Having a volva at the base of the stipe: pileus ovate, sitting on the stipe, entire, covered with dissolving juice. 58. 1.

2. *Receptacles of a membranaceous substance, not dissolved; seeds pulverulent.*

(Receptacles lamellar or vein-like, beneath a pileus.)

AMANITA. Having a volva: pileus fleshy, mostly verrucose: lamellae convert, sub-entire: stipes mostly elongated, annulated or naked 58. 1.

AGARICUS. Destitute of a volva at the base of the stipe, with or without the ring: lamellae either entire or with shorter ones intermixed, rarely simply ramose. Never veiny. A vast genus. Persoon describes 447 species, which occupies one third of his work on Fungi. 58. 1.

MERULIUS. Pileus fleshy or membranaceous: receptacles vein-like; the veins being superficial, tumid, in the form of folds. 58. 1.

(Receptacles in the form of tubes beneath a pileus.)

DEDALEA. Pileus (halved) cork-leathery, reticulated beneath with oblong hollows, waving and torn, somewhat pore-form. This genus partakes of the characters of the Merulius and the Boletus. 58. 1.

BOLETUS. Pileus various: tubes and pores terete, entire. A large genus. Persoon describes 93 species. 58. 1.

(Receptacles in the form of teeth or aculeate processes growing from a pileus.)

SISTOTREMA. Pileus various: receptacles at first in circular pores; a length torn mostly in the middle into compressed deformed teeth. This genus partakes of the characters of the Boletus and Hydnum. 58. 1.

HYDNUM. Pileus various: receptacles echinate, or in entire prominent subulate teeth. 58. 1.

(Receptacle a smooth or papillose membrane.

THELEPHORA. Pileus coriaceous, with a papillose membrane beneath: rarely covered with minute bristles, or uniformly smooth. 58. 1.

MERISMA. Branching, coriaceous, compressed, smooth: mostly pilose at the apex. This genus in substance resembles that of the Thelephora, and in form that of the Clavaria. 58. 1.

(Receptacles fleshy, elongated; pileus confluent with the stipe.)

CLAVARIA. The clavate pileus simple and branched, confluent with a thick stem, or with a short stipe, rarely manifest. 58. 1.

GEOGLOSSUM. The clavate pileus fleshy, mostly compressed, short, contiguous to the stipe, with a prominent margin. 58. 1.

(Pileus membranaceous, distinct from the stipe.)

SPATHULARIA. Clavate: pileus compressed, membranaceous, decurrent into the stipe both sides. 58. 1.

LEOTIA. Head-form, pileus conic or orbicular, reflexed at the margin, closely surrounding the stipe. 58. 1.

HELVELLA. Pileus membranaceous, inflated, somewhat deformed, deflected both sides; mostly stiped. 58. 1.

MORCHELLA. Pileus elongated, teretish, lacunose, with elevations adhering within. Without volva or seminal juices. 58. 1.

TREMELLA. Open, gelatinous, circular-plicate: pileus not distinct. 58. 1.

PEZIZA. Receptacle hemispheric, concave or cup-form, a little swollen, bearing the seeds in a smooth disk above. Capsules follicle-like, generally inconspicuous to the naked eye, seeds 8, flying about and giving off fetid fumes. 58. 1. Persoon describes 151 species.

AEGERITA. Minute stemless fungi, of a granulated appearance, stuffed and sub-farinaceous. 58. 1.

3. *Fungus byssus-like (flax-like or filamentose,) comprising the old genus Byssus and its relatives.*

ISARIA. Sub-filamentose, simple or ramose, sprinkled over with a farinaceous (sub-filamentose) seminal dust. Substance soft, colour white. 58. 1.

MONILA. Stiped or open, filamentose; filaments monili-form or articulated. 58. 1.

DEMATIUM. Filamentose fungus of an indeterminate form, erect or depressed, sub-fascicled or diffused; threads smooth, not interwoven. 58. 1.

ERINEUM. Growing on leaves: filaments rigid with little lumps, conglomerated into a cup-form head impressed on the leaf. 58. 1.

RACODIUM. Expanded, soft; bearing a kind of clothing with threads densely interwoven. 58. 1.

HIMANTIA. Creeping, villose, branch-fibrous. 58. 1.

MESENTERICA. Creeping, gelatinous, veiny: ramifications of the veins joined by a little membrane. 58. 1.

END OF GENERA.

NORTH AMERICAN PLANTS.

SPECIES.

☞ A number at the end of a specific description denotes the average height of the plant in the wild state—in feet with f, in inches with i.

A.

Abies, PINUS.

15—10. ACACIA. 33. 93.

Southern.

brachyloba, W. (1) (W. w. J. 2f.) unarmed: leaves bipinnate; leafets 8-paired, with glands between the lower pair: spikes globose, solitary: legume lanceolate, strait. Stamens generally 5.

glandulosa, Mx. (2) (W. w. Ju. 2f.) unarmed: leaves bipinnate; leafets 12-paired, glands between every pair: spikes globose, solitary, peduncled, axillary: legume falcate.

farnesiana, (W. y ♄.) spinous: leaves bipinnate; leafets 8-paired: spikes globose, sessile. Flowers fragrant, legumes fusiform. 10 f.

lutea, Leavenworth. (W. y. Ju. 2f.) unarmed, glabrous: leaves bipinnate: leafets very numerous, oblong-linear: spikes sub-globose, solitary: peduncles axillary, very long: legume obovate, large. Resembles Schrankia uncinata.

cooleyi, Ea. (W. w. 2f.) leaves bipinnate, very irritable: legumes linear, elongated, smooth: spikes capitate. Described by Torrey, but not named. Darlingtonia.

19—15. ACALYPHA. 38. 96.

virginica, (three-seed mercury. O. g. Au. ☼.) hairy: pistillate flowers at the base of the staminate spike: involucres heart-ovate, acuminate, toothed: leaves short-petioled, lance-oblong, remotely and obscurely serrate. Coarse and unsightly Varies much in the dinasty of its leaves and in height. 10 i. S.

caroliniana, Wr. (E. g. Ju. 2f.) leaves on long petioles, lance-oval, acuminate, acutely serrate, nerved, slightly cordate at the base: fruit-bearing branches generally naked: capsule echinate. The existence of this species in the Northern States was questioned, until Darlington found it in Pennsylvania. 18 i. S. Phyllanthus.

8—1. ACER. 23. 66.

rubrum, (red maple, soft maple. O. r. Ap. ♄.) leaves palmate, 5-lobed, cordate at the base, unequally gash-toothed, glaucous beneath, dividing incis-

(1) Mimosa illinoensis, Mx. (2) Mimosa glandulosa, Mx.

ions between the lobes acute : flowers in fives in sessile umbels, with long pedicels ; germs glabrous. 50 f. *S.*

dasycarpum, (1) (white maple, silver maple. O. g-y. Ap. ♄.) leaves palmate-5-lobed, truncate at the base, unequally gash-toothed, glabrous and glaucous beneath, obtusely pinnate : flowers glomerate ; pedicels short : germs downy. 50 f. *S.*

barbatum, Mx. (2) (hairy maple. w-g. Ap, ♄.) leaves heart-ovate, short-3-lobed, unequally serrate, glaucous beneath, and hairy at the nerves : peduncles hairy, staminate ones branching, pistillate ones simple : calyx bearded within ; wings of the capsules erect. Small. 15 f. *S*

saccharinum, (sugar maple, rock maple, hard maple. O. r-y M. ♄.) leaves palmate-5-lobed, at the base sub-cordate, acuminate, obtusely sinuate, sinuate-toothed, glaucous beneath : peduncles in a nodding corymb. Large tree. 50 f. *S.*

nigrum, Mx. (sweet-tree, black maple. A. y. Ap. ♄.) leaves palmate 5-lobed, cordate with the sinus at the base closed, lobes spreading, somewhat sinuate-toothed, downy beneath : flowers corymbed : capsules turgid, sub-globose. Large tree, affording almost as much sugar as the last. 50 f. *S.*

striatum, Mx. (3) (striped maple, false dogwood, moose-wood. O. g. M. ♄.) lower leaves roundish, upper ones 3-cuspidate-acuminate, sharply serrate, glabrous : racemes simple, pendant. Small tree, with a greenish-striped bark. 15 f. *S.*

spicatum, Lk. (4) (mountain maple bush. A. y-g. M. ♄.) leaves sub-5-lobed, acute, toothed, pubescent beneath : racemes compound, erect. 15 f. *S.*

negundo, (5) (ash maple, box-elder. M. ♄.) leaves pinnate or ternate, unequally serrate. Flowers diœcious. Large tree. 40 f. *S.*

Southern.

macrophyllum, Ph. (W. g-y. Ap. ♄.) leaves digitate-5-lobed ; sinuses rounded, lobes somewhat 3-lobed, repand-toothed, hairy beneath : racemes erect : filaments 9, hirsute : germs very hirsute. 40 f.

circinatum, Ph. (W.) leaves orbicular, sub-cordate at the base, 7-lobed, unequally acute-toothed, glabrous both sides, nerves and veins hairy at the axils.

glabrum, T. & J. (W.) leaves roundish, 5 or 7-lobed, truncate at the base, lobes acutely toothed, glabrous both sides : corymbs peduncled : fruit glabrous, with broad-ovate diverging wings. Dirca.

18—5. Acerates. (6) 30. 47.

viridiflora, Ph. (green milkweed. E. g Ju. 2f.) stem simple, erect, hirsute ; leaves lance-oblong, obtusish, sub-sessile, downy-hirsute both sides : umbels lateral, solitary, sub-sessile, nodding, sub-globose, dense flowered : no little horn in the nectaries. Dry. 3 f. *S.*

lanceolata, Ives. (E. g. Ju. 2f.) stem decumbent, hirsute : leaves lanceolate, acute, sub-sessile : umbels hirsute, lateral, solitary, sessile, sub globose, dense-flowered, nodding : no little horn in the nectaries. Dry sandy plains. A very distinct and well defined species. 30 i. *S.*

Southern.

longifolia, E. Mx. (E. w-r. M. 2f.) stem decumbent : leaves alternate, linear : umbels lateral, erect : nectary very short : no little horn in the nectaries. 2 f.

nuttalliana, T. (W. g. 2f.) small, decumbent, hirsute : leaves oblong-ovate, scattered, acutish, short petioled : umbels terminal : nectaries intire, close-pressed : masses of pollen short : no little horn in the nectaries. 6 i. This is the lanuginosa of Nuttall. Apocynum.

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(1) eriocarpum, Mx. (2) carolinianum, Wr. (3) pennsylvanicum, W. (4) montanum, W. pennsylvanicum, Wm. (5) Negundo fraxinifolium, N. (6) Aclepias.

17—2. Achillea. 49. 55.

millefolium, (yarrow, milfoil. O. w. J. 2f.) leaves 2-pinnatifid, downy: the divisions linear, toothed, mucronate: calyx and stem furrowed. 15 i. *S.*
ptarmica (sneeze-wort. w. Au. 2f.) leaves linear, acuminate, equally and sharply serrate, glabrous. Damp. 15 i.
setacea, P. (W. w. Ap. 2f.) leaves bipinnate; leafets setaceous-linear, mucronate, pilose, crowded: corymb compound, fastigiate. 18 i.

Southern.

tomentosa, W. (W. y. J. 2f.) leaves 2 pinnatifid, villose; divisions crowded, lance-linear, entire: corymbs compound.
asplenifolia, V. (r. 2f.) radical leaves 2-pinnatifid, cauline ones gashed: divisions ovate, serrate-mucronate, obtuse. Heliopsis.

Achnantherum, Agrostis.

15—5. Achyranthes. 14 73.

Southern.

repens, E (1) (forty knot. E. March. 2f.) stem prostrate, hairy: leaves opposite, petioled, lanceolate: flowers in sessile, ovate, axillary heads.
ficoidea, W (E. Ju. 2f.) stem creeping, glabrous: leaves broad-lanceolate, petioled: flowers in spherical, pubescent heads.
vermicularis, (E. J. 2f.) glabrous: stem creeping: leaves sub-terete, fleshy flowers in terminal solitary, oblong heads. Oplotheca.

17—2. Acmella. 49. 55.

Southern.

repens, E. (E. y. S. 2f.) stem creeping: leaves lance-ovate, toothed, 3-nerved, sub-pubescent: peduncles axillary and terminal, very long, 1-flowered. 18 i.
occidentalis? N. (E.) stem creeping, sub-pubescent: leaves ovate, crenate, obsoletely 3-nerved, smooth, petioled: peduncle axillary, grooved: calyx minute. Resembles a Rudbeckia. Peduncles 3 inches long. Tetragonotheca.

20—5. Acnida. 53. 29.

cannabina, (water hemp. L. w-g. Ju. ☼.) leaves lanceolate: capsules smoothish, acute-angled. Damp or wet, both on salt marshes and inland. 3 f. *S.*
cuscocarpa, (w-g. Ju. ☼.) leaves lance-oval: capsules rugose, obtuse-angled. Damp. *S.* Humulus.

12—5. Aconitum. 26. 61.

uncinatum, (monk's hood. b. J. 2f.) stem flexuose: leaves palmate, 3 to 5-parted; divisions rhomb-lanceolate, gash-toothed: upper lip of the corol lengthened, convex, beaked. Cultivated. 2 f. *S.*

Exotic.

napellus (wolf's bane. b. J. 2f.) leaves shining, 5-parted; the divisions 3-parted by gashed incisions, sub-divisions linear: upper lip of the corol lanceolate, ascending, 2-cleft; spur strait, obtuse. 2 f. Aquilegia.

6—1. Acorus. 2. 13.

calamus (sweet flag, calamus. O. g-y. J. 2f.) spike protruding from the side of a sword-form leaf-like scape. Water or wet. Root strongly aromatic. 2 f. *S.* Juncus.

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(1) Gomphrena polygodoides, L. Illecebrum achyrantha, Wr. and pulegioides, Mx.

21—1. ACROSTICHUM. 55. 5.

Southern.

aureum, Mx. (forkfern. Ju. 2f.) frond pinnate; leafets stiped, bases wedge-form, lance-oblong, entire, acuminate; the upper ones fruit bearing. Very large, 4 or 5 feet high. Hypopeltis.

12—1. ACTAEA. 26. 61.

rubra, W. (1) (baneberry. O. w. M. 2f.) petals shorter than the stamens, acute: pedicels of the hemispheric raceme less than the general peduncle when mature. Berries red. Bw. MS. 2 f. *S.*

alba, Bw. (necklace weed, white beads. O. w. M. 2f.) petals equalling the stamens, truncate: pedicels of the oblong raceme as large as the general peduncle when mature. Berries white. The leaves of both species are decompound. Woods. 2 f.

Southern.

pachypoda, E. (E. 2f.) leaves decompound; leafets ovate, acuminate, deeply serrate: berries small, supported on thick peduncles: flowers in a crowded terminal raceme. Macrotis.

17—2. ACTINELLA. (2) 49. 55.

Southern.

lanata, Ph. (W. y. J. 2f.) wooly on all parts: leaves linear, pinnatifid above: peduncles elongated, 1-flowered: rays 2-toothed: seed glabrous, 5-angled.

acaulis, (W. y. J. 2f.) pilose: scape 1-flowered, naked: leaves linear-spatulate, entire: rays 8 to 10: chaffs of the egret 5 to 7, ovate, short-awned. 6. i. Buphthalmum.

Actinochloa, ATHEROPOGON

17—3. ACTINOMERIS. 49. 55.

squarrosa, N. (w. y. Au. 2f.) stem erect, winged, pubescent and panicled above: leaves lanceolate, serrate, scabrous: calyx spreading, loose: receptacle sub-globose, at length squarrose. 3 f. *S.*

Southern.

helianthoides, (W. y.) leaves lanceolate, acute, serate, under side white-villose: corymb simple, compact. Stem winged.

alata, (E.) leaves ovate, acuminate, serrate, 3-nerved, opposite, decurrent. Centaurea.

Adelia, BORYA.

21—1. ADIANTHUM. 55. 5.

pedatum, (maiden hair. O. J. 2f.) frond pedate, with pinnate branches: leafets halved; upper margin gashed—barren segments toothed, fertile ones entire: stipe capillary, very glabrous. Woods. 1 f. *S.* Dicksonia.

12—13. ADONIS. 26. 61.

Exotic.

autumnalis, (pheasant's eye. Au. ☼.) flowers 5 to 8-petalled: fruit sub-cylindric: petals erose, or emarginate. Illicium.

8—4. ADOXA. 13. 34.

Southern.

moschatellina, (W. g.) peduncles about 4-flowered: filaments united in pairs at the base; anthers roundish. Laurus.

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(1) brachypetala, Dc. americana, Ph. spicata, Mx. Pachypoda, E. (2) Actinea, Galardia.

21—6. Aecidium. 58. 1.

1. *Cespitose: receptacles aggregated in a tuft, making a crust-like spot on leaves.*

cornutum, becoming yellow; receptacles very long, curved, olive-grey. Appears like saffron coloured spots on the upper sides of leaves of mountain-ash, &c.

cancellatum, tuberculate, chesnut-brown: receptacle at length splitting into divisions cohering at the apex. Grows on the under side of withering or dying pear leaves.

rhamni, cespitose, rose-coloured: receptacles elongated, somewhat diverging, at length becoming pale. On the leaves of the rhamnus.

tussilaginis, spots purplish yellow; tufts flat; receptacles immersed. Occurs on the leaves of the colt's foot, (tussilago farfara) is hardly prominent above the surface of the leaf.

2. *Simple; receptacles scattered; crust, which is distinct, is never conjoined.*

euphorbiae, simple, crowded: receptacles cylindric, pale; mouth reflexed, yellow, with dust. On the leaves of Euphorbia maculata.

anemones, simple, scattered: receptacles cylindric, a little prominent, pale, mostly toothed; wholly filled with white dust. On the leaves of Anemone nemorosa in the spring.

punctatum, simple, scattered: receptacle sub-immersed: mouth somewhat converging; dust compact, becoming sooty-yellow. Found sometimes on leaves of Anemone. Uredo.

21—6. Aegerita. 58. 1.

candida, crowded, smooth, white. Found in autumn on alders, &c. often on the wood in damp places. Isaria.

3—2. Aegilops. 4. 10.

Southern.

hystrix, N. (W. 2f.) spike squarrose, with long, recurved, divergent awns: calyx smooth, generally 4-parted to the base; segments mostly 2-cleft, unequally 2-awned: spikelets about 4-flowered: dorsal valve of the corol terminated by 2 or 3 unequal awns. 6 i. Panicum.

16—10. Aeschynomene. 32. 93.

hispida, W. (false sensitive plant. y-r. Ju. ❀.) stem erect; stem and petioles tubercle-hispid: leaves in many pairs; leafets linear, obtuse: stipules membranaceous, half arrow-form: racemes simple, few-flowered: loments hispid. Wet. 30 i. *S.*

Southern.

viscidula, (*y.* 2f.) stem prostrate, slender, viscid hairy: leafets 7 or 9, obovate: peduncles generally 2-flowered: loment hairy; joints deeply notched. Sandy. 3 f. Stylosanthes.

7—1. Aesculus. 23. 66.

glabra, (little buck-eye. W. y. w. M. ♄.) leaves in fives, glabrous: corol 4-petalled, spreading; claws as long as the calyx: stamens longer than the corol: fruit spinous. 12 f. *S.*

Exotic.

hippocastanum, (horse-chesnut. w. J. ♄.) leaves digitate, with about 7 divisions: corol 5-petalled, spreading: flowers in a panicled pyramid. 15 f.

Southern.

pavia, (buck-eye. r. Ap. ♄.) leaves in 5 divisions, glabrous, unequally toothed: corol 4-petalled; the claws of the converging petals as long as the calyx. Herbage narcotic; root soap-like. 4 f.

discolor, Ph. (w. y. r. M. ♄.) leaves in 5 divisions, acuminate at each end, downy beneath, unequally serrulate: claws of the petals as long as the calyx: fruit not awned. 4 f.

flava, (y. March ♄.) leaves in 5 divisions, hairy beneath near the midrib, equally serrulate: corol 4 petalled, converging; claws longer than the calyx. 5 f.

monostachya, (W. Ap. ♄.) leaves in 5 divisions, downy beneath: raceme very long, corol 4-petalled, expanding: stamens very long. 4 f.

Saururus.

5—2. AETHUSA. 45. 60.

Southern.

divaricata, (E. w. ☼.) stem erect, slender: leaves biternate; segments narrow-linear: umbels terminal, without involucres. partial umbels 3 to 5-flowered. fruit hispid.

leptophylla, (W. r. w. ☼.) leaves biternate, gashed; margin of the acute segments entire: umbel 3-parted, sessile: partial umbels naked, few-flowered. 1 f.

Seseli.

Afzelia, SEYMERIA.

21—6. AGARICUS. 58. 1.

1. *Lamellae juiceless or becoming dry; not smoke-dusty, nor sooty: stipe annulated.*

procerus, large: pileus fleshy, bossed, scaly, reddish ash-coloured: lamellæ very remote, white: stipe bulbous, very long: ring moveable. Var. *squamosus*, pileus convex, and scaly above, lamellæ pressed together outwardly from the stipe, and becoming yellow. Var. *excoriatus*, smaller, whitish: scales obsolete. Woods and fields.

squarrosus, cespitose: pileus fleshy; pileus and stipe scaly and scurfy, rusty-yellow: lamellæ crowded, pale-olive. Often on roots and trunks of trees in autumn.

polymyces, cespitose, heaped together: pileus bossed, hairy-scaled, sooty-yellow: lamellæ sub-decurrent, white becoming pale: stipe annulated, conic olive ash-coloured, solid, elastic. Woods on trunks, or the earth in autumn.

candidus, cespitose: pileus somewhat fleshy, glabrous, cinnamon-colour: lamellæ sub-decurrent, pale rust-coloured: stipe scaly, cylindric, rather slender. On trunks in autumn.

2. *Pileus mostly fleshy: lamellæ emarginate, mostly one-coloured, and at length cinnamon: stipes mostly bulbous, having a veil-like volva dissolved into spider-web-like filaments.*

decolorans, pileus viscid, yellow. lamellæ at first bluish-purple, at length cinnamon: stipe glabrous, sub-tuberous, white: veil-like volva rust-colour.

flavidus, cespitose: pileus somewhat fleshy, yellow; the central part more obscure: lamellæ distinct, one-coloured, becoming yellow: stipe soft, thickening downward, and becoming sooty-yellow. On trunks.

decipiens, growing in groups: pileus fleshy, acutely-bossed and membranaceous.

decipiens, growing in groups; pileus fleshy, acutely-bossed, and membranaceous near the centre, depressed: lamellæ broadish, obscurely cinnamon-coloured: stipe long, from white becoming reddish.

3. *Pileus fleshy, entire, convex: lamellæ one-coloured, becoming dry: stipe central, destitute of a ring or curtain-like volva.*

(Colour of the pileus brownish, or brownish yellow.)

pratensis, tawny-red, hardish: pileus campanulate, either obtusely bossed, or

flattish, glabrous: lamellæ thick, distant, decurrent: stipe short, somewhat slender, tapering downwards. Among grass.

reflexus, growing in groups, rusty-yellow: pileus somewhat fleshy, acutely bossed scaly, reddish-yellow: lamellæ distinct, light-cinnamon: stipe long, slender, fibrous-scaly, scales reflexed. Woods.

radicatus, pileus fleshy, bossed, viscous rugose, sooty, purple or tawny: lamellæ sub-decurrent, white: stipe very long, having a long fusiform root. Woods.

velutipes, cespitose: pileus somewhat fleshy, repand, glabrous, brown: lamellæ ventricose, becoming yellow: stipe tomentose, becoming dark liver-brown. Autumn.

(Colour of the pileus shining, red or light yellowish-green.)

coccineus, growing in groups: scarlet all over: pileus sub-membranaceous, convex, sub-viscous: lamellæ distinct, connected by teeth: stipe hollow, sub-compressed. Autumn in grass.

conicus, pileus conic, acute, sub-viscous, light greenish-yellow: lamellæ crowded, ascending, becoming yellow: stipe long, yellow. Var. *tristis*, solitary: pileus acutely campanulate, from yellowish-green becoming dark: lamellæ free

russula, large: pileus fleshy, sub-convex, with rose-red scales: stipe rose-red, solid, short: lamellæ unequal, white.

(Colour of the pileus white.)

discoideus, sub-cespitose: pileus fleshy, viscid, flattish, white; middle part yellow, or somewhat rust-colour: lamellæ sub-decurrent; lamellæ and stipe middling white.

pulvinatus, pileus fleshy or rather corky, cushion-like, sub-repand, glabrous, white; middle part pale flesh-coloured: lamellæ crowded, decurrent, white: stipe very short, solid, hard. Woods.

4. *Small, tender: pileus mostly membranaceous, striate, pellucid, convex, permanent: lamellæ becoming dry, one-coloured: stipe mostly hollow, elongated, naked.*

galericulatus, cespitose, inodorous: pileus membranaceous, bossed, tawny lead-colour: lamellæ distinct, white: stipe smooth, rooting, strigose-haired at the base. On trunks in autumn.

hypnorum, small, very tender, rusty-yellow all over: pileus bell-form, furrowed: lamellæ distant, broadish: stipe middling.

clavus, growing in groups, extremely minute: pileus somewhat fleshy, papillose, orange or red: lamellæ broadish: stipe and lamellæ white.

lacteus, white all over: pileus campanulate, obtuse, striate: lamellæ distinct, ascending: stipe rather long, hirsute at the base.

corticola, minute, scattered, tawny: pileus hemispherical, sub-plicate: lamellæ uncinate, linked together, white: stipe shortish, incurved. In crevices of bark, of wood, &c.

5. *Pileus membranaceous, fugaceous or somewhat fleshy, at length torn: lamellæ at length becoming a black juice, or dusty smut: stipe white, naked or annulated.*

(Membranaceous, almost wholly becoming a black juice: lamellæ very thin.)

comatus, growing in groups: pileus conic, scaly, white: scales yellow: lamellæ crowded or heaped together, at first white-purple: stipes very long; ring moveable.

cinereus, pileus conic, furrowed, sub-tomentose, cinereous; smooth and bluish-purple at the apex, the margin at length torn and inflexed: lamellæ linear, punctate, somewhat zigzag: stipe long, scaly. Gardens and woods.

disseminatus, crowded or heaped together, small, fugaceous: pileus somewha

oval, striate-plicate: at first somewhat reddish-yellow, then grey: lamellæ distinct, in some measure linked together, light sooty-yellow: stipe mostly incurved.

domesticus, pileus campanulate, obtuse, undulate, sulcate, sooty: scales bran-like: lamellæ crowded, linear; at first bluish-red, then becoming black. On damp walls, &c. about houses.

narcoticus, pileus convex, cinereous; plicate with distinct, bifid, dense folds: vertex entire: stipe subulate: lamellæ more rare or distant, entire and halved, alternate. It diffuses a very narcotic odour.

(Somewhat fleshy: lamellæ at length becoming black, smut or soot-like, in nebulous or sooty spots.)

semiglobatus, pileus fleshy, hemispherical, sub-viscose, becoming yellow: lamellæ very broad, horizontal, becoming dark-cloudy: stipe long, annulated.

papilionaceus, pileus somewhat fleshy, campanulate, sooty (becoming almost black:) lamellæ all attached, dark-cinereous and various, white at the margin: stipe furrowed at the apex, dark-pulverulent.

6. *Pileus fleshy or sub-membranaceous, smooth, permanent: lamellæ somewhat nebulous, at length dark-stained or one-coloured, sub-ramose, finally becoming more obscure and dark with seminal dust: stipe annulated or naked.*

(Pileus fleshy: stipe annulated.)

edulis, in groups, large: pileus white, smooth or obsoletely scaly: lamellæ red: stipe long, bulbous; the ring-volva manifest. This is an eatable mushroom; but not the most common.

campestris, pileus fleshy, flattish, having dark-yellow scales: lamellæ becoming yellowish-red: stipe short; the ring-volva rather incomplete. This is the common eatable mushroom.

precox, somewhat in groups; pileus fleshy, hemispheric, tan-yellow, at first white: lamellæ flat, thin, watery-soot-yellow: stipe solid, somewhat tenacious; ring-volva fugaceous.

latericius, cespitose, large; pileus fleshy, sub-viscous, brick-colour; margin yellow: lamellæ distinct, somewhat nebulose, becoming greenish-cinereous: stipe long, sub-solid; ring fugaceous, becoming black.

fascicularis, small, cespitose; pileous somewhat fleshy, bossed, reddish-yellow: lamellæ nebulose, becoming green: stipe hollow, slender: the curtain-like volva becoming black.

(Pileus mostly fragile, membranaceous, sub-aquose: stipe naked.)

denticulatus, slender; pileus hemispheric, livid purple: lamellæ toothed at the margin: stipe hollow, sooty-yellow.

gracilis, wholly fragile; pileus membranaceous, campanulate, acute, very soft: lamellæ linear, becoming dark-cinereous: stipe very long, glabrous. Pileus varies to flesh-colour, dark reddish-yellow, white, &c.

7. *Pileus fleshy, mostly depressed: lamellæ becoming milky.*

piperatus, pileus funnel-form, expanded at the margin, glabrous, white: lamellæ crowded, forked, white becoming pale.

subdulcis, pileus funnel-form, becoming reddish-yellow: lamellæ pale flesh-colour: juice sweetish.

8. *Pileus fleshy, mostly depressed: lamellæ of equal length, white, becoming dry: stipe naked, white.*

rosaceus, pileus convex, flat, smoothish, rose-coloured or pale red: lamellæ and stipe white.

9. *Pileus entire, membranaceous, mostly striate, funnel-form or umbilicate: lamellæ of equal length, not becoming milky, mostly decurrent: stipe naked, central. Small.*

cæsula, cespitose, white; pileus deeply furrowed: lamellæ united in a tube surrounding the stipe: stipe becoming black.
androsaceous, in groups, permanent; pileus flattish, sub-plicate, white, obsoletely bossed: lamellæ simple, all attached: stipe becoming dark liver-brown.
epiphyllus, in groups, minute, white; pileus membranaceous, convex, at length sub-umbilicate: lamellæ few, ramose: stipe becoming black.
campanella, in groups; pileus hemispheric, umbilicate, striate, rust-coloured: lamellæ decurrent: stipe hollow, chesnut-brown.

10. *Pileus fleshy, depressed, oblique, entire or halved: stipe naked, not attached to the centre of the pileus, lateral or none.*

(Pileus entire: stipe not in the centre.)

inconstans, largish; pileus sub-tenacious, depressed, entire or halved, lobed, zigzag, somewhat reddish-yellow: lamellæ sub-ramose, crisped at the base, white, and somewhat shining.

(Pileus halved: stipe marginal: lamellæ decurrent, diverging from the side of the pileus.)

flabelliformis, sub-stiped; pileus flattish, torn in various forms; margin crenate: lamellæ 3-cleft, pale, sub-crenate: stipe short or none.
spathulatus, erect, spathe-form; pileus pale tan-colour; the middle part spongy and scaly: stipe perpendicular, channelled.
mollis, in groups, soft; pileus glabrous, gibbose, pale: lamellæ watery-cinnamon-colour.
styptacus, cespitose; pileus sub-coriaceous, emarginate, tan-colour, sub-farinaceous: lamellæ very thin, veiny, connected, cinnamon-colour: stipe compressed, ascending, dilated at the apex.
mitis, in groups, all over white; pileus somewhat fleshy, glabrous, smooth: lamellæ simple: stipe horizontal, dilated at the apex.

(Pileus halved, somewhat corky.)

ulmeus, coriaceous, tomentose, whitish-grey: lamellæ split, revolute at the margin. Becoming purple-cinereous.
abietinus, sub-cespitose, dark sooty-yellow; pileus glabrous, smooth: lamellæ glaucous: branching in the young state.
coriaceus, coriaceous, marked with zones, tomentose, pale: lamellæ sub-ramose, pale-woody.
sepiarius, coriaceous, hard, flat both sides; pileus strigose-tomentose, chesnut-brown: lamellæ crowded, ramose, becoming yellow.

Merulius.

6—1. AGAVE. 10. 17.

virginica, (agave. y-g. S. 2f.) stemless: leaves with cartilaginous serratures: scape very simple. *S.*

Phalangium.

11—2. AGRIMONIA. 35. 92.

eupatoria, (agrimony. O. y. Ju. 2f.) cauline leaves interruptedly pinnate, the terminal leafet petioled: leafets obovate, gash-toothed, almost glabrous: flowers sub-sessile; petals twice as long as the calyx: fruit hispid. 2 f. *S.*
parviflora, A. (dotted agrimony. y. Ju. 2f.) cauline leaves pinnate: leafets mostly lanceolate, serrate; terminal ones sessil petals one and a half the length of the calyx.

Southern.

suaveolens, (E. y. Ju. 2f.) stem very hispid: leaves interruptedly pinnate: leafets numerous, narrow, lanceolate, acutely toothed, scabrous above, and pubescent beneath: fruit turbinate, smooth at the base. 5 f.

Crataegus.

3—2. AGROPYRON. 4. 10.

repens, Pb. (couch-grass, quack-grass. O. J. 2ℓ.) spikelets oblong, 5-flowered: glumes subulate, many-nerved: florets acuminate: leaves flat: root and base of the stem creeping. 2 f. This is the Triticum repens. Troublesome to farmers in rich soils—very useful for binding the banks of canals and sandy soils. *S.*

caninum, Rs. (E. 2ℓ.) spikelets about 5-flowered, compressed: glumes 3-nerved, bristled at the tip: florets bristled at the tip: root fibrous. 2 f. *S.* Secale.

10—5. AGROSTEMMA. 22. 82.

githago, (cockle. O. r. J. ☼.) hirsute: calyx longer than the corol: petals entire. *S.*

Exotic.

coronaria, (rose campion. Au. ♂.) tomentose: leaves lance-ovate: petals emarginate. Oxalis.

3—2. AGROSTIS.* 4. 10.

stricta, W. (E. J. 2ℓ.) panicle elongated, strait: calyx equal: corol smaller than the calyx, with unequal valves, and an awn at the base of the outer one longer than the flower.

vulgaris, S. (red-top. O. J. 2ℓ.) panicle with smoothish branches, spreading in maturity: outer valve of the corol 3-nerved: stipule short, truncate. 18. i.

alba, (white-top. bonnet grass. O. J. 2ℓ.) panicle with hispid, spreading, lax-branches: outer valve of the corol 5-nerved: stipule oblong. 18 i. Var. *decumbens*. (Florin grass) stem decumbent. This variety is considered as a distinct species by some, and called *stolonifera*. *S.*

lateriflora, Mx. (Au. 2ℓ.) culm erect, branched above, sending off shoots at the base: panicle lateral and terminal, dense: calyx acuminate: corol longer than the calyx, equal, hairy at the base, awnless. Root creeping. Leaves broad with scabrous margins and compressed sheaths. 2 f.—*mexicana*, perhaps a synonym, is too vague in its application to be retained. Var. *filiformis* has a very slender panicle, and the corol nearly equalling the calyx—sometimes the culm is sub-decumbent. Swamps. *S.*

sobolifera, M. (Au. 2ℓ.) stem sending off shoots, and sometimes decumbent, at the base: but mostly erect, branched: panicle contracted, filiform, simple: branches compressed: corol longer than the equivalved calyx, hairy at the base, valves equal, awnless, mucronate. Resembles Var. *filiformis* of the lateriflora. Woods.

tenuiflora, W. (Ju. 2ℓ.) culm almost simple, hairy at the joints; branches, when present, close-pressed: stipules obsolete: panicle contracted, with filiform branches: corol considerably longer than the calyx; the lower valve with an awn twice as long as the flower. 3 f. Woods. *S.*

sylvatica, T. (A. 2ℓ.) culm erect, much branched, diffuse, smooth (glabrous?) stipule lacerated: panicle with filiform branches: corol longer than the calyx: with awns thrice as long as the flower. The diffusa. M. 3 f.

compressa, T. (S. 2ℓ.) whole plant glabrous: culm erect, compressed, simple: panicle oblong, sub-contracted, with capillary branches: calyx equal, shorter than the corol, acute: corol sub-obtuse, smooth (glabrous?) at the base. Stem sending off shoots at the base. 18 i. Swamps in sandy plains.

serotina, T. (S. 2ℓ.) culm filiform, much compressed: leaves narrow, keeled, erect: panicle attenuated; branches capillary, erect, with alternating branchlets: calyx unequal, half as long as the awnless corol. 18 i. Swamps in sandy plains.

juncea, Mx. (Oc. 2ℓ.) leaves strait, erect, setaceous, convolute: panicle long-

* I follow Torrey in all the northern species, implicitly.

pyramidal, whorled : flowers awnless ; calyx half as long as the corol. The indica of M. 2 f. *S.*

virginica, (S. 2f.?) culms sub-cespitose, numerous, procumbent at the base and assurgent above : leaves dichotomous, involute, rigid : panicles lateral and terminal, spike-form—lateral ones concealed : calyx with equal valves and about equalling the corol. No stipules ; stamens minute. Has been mistaken for *pungens*. Sandy. *S.*

longifolia, T. (2f.) panicle contracted, spiked, generally concealed : corol much longer than the calyx, sub-equal, glabrous, without spots or awns : leaves filiform, very long, recurved at the tips. Torrey introduces this species to conjoin the supposed two species *involuta* and *aspera*. 3 f. Sandy.

clandestina, Sl. (S. 2f.) panicle spiked, partly concealed : corol unequal, much longer than the calyx, hairy and spotted, slightly awned : leaves very long rigid : stipule bearded. 2 f. Sandy. *S.*

spica-venti, W. (bent grass. J. ☼.) panicles spreading : awn of the outer petal straight, stiffly erect, very long.

canina, W. (Ju. 2f.) culm prostrate, sub-ramose : calyx elongated : petals with recurved awns on their backs. Wet. These two last species, Pursh says, were introduced.

Southern.

arachnoides, E. (E. Ap. 2f.) stem erect : panicle long, slender : calyx scarcely longer than the corol ; the outer petal with a long weak spiderweb-like awn on the back. 6 i.

trichopodes, E. (E. S.) panicle long, diffuse, capillary : valves of the corol equal ; the outer one with a short awn : leaves linear, flat. 3 f. Stipules long, membranaceous.

dispar, Mx. (E.) erect, large : panicle loose, somewhat in a whorled pyramid, many-flowered : glumes unawned, with the outer valve largest and one of the inner very small.

pauciflora, Ph. (E. Ju. 2f.) panicle with filiform, 1-flowered branches : corol awned, twice as long as the unequal calyx, hirsute : sheaths villous. 18 i.

cryptandria, T. & J. (W.) panicle pyramidal with spreading, sub-alternate branches, hairy at the axils : flowers sub-racemed, unarmed : lower valve of the calyx very short ; upper one as long as the nearly equal corol : sheaths bearded at the throat. 3 f.

airoides, T. & J. (W.) panicle pyramidal, with branches somewhat in pairs, spreading ; naked at the axils : flowers solitary, unarmed ; glumes unequal, mostly shorter than the nearly equal corol : sheaths bearded at the throat.

caespitosa, T. & J. (W.) cespitose : culm branched, somewhat incurved : leaves involute, sub-dichotomous, pungent : panicle contracted : flowers awned. 4 i.

brevifolia, N. (W.) leaves much shorter than the solid, compressed, cespitose culms : panicle with alternate, close-pressed, racemes : calyx equal, about half as long as the corol. 1 f.

Cinna.

3—2. Aira. 4. 10.

flexuosa, (hair-grass. O. J. 2f.) panicle spreading, trichotomous : branches flexuose : calyx a little shorter than the florets, and about the length of the awn : leaves setaceous : culm nearly naked. 20 i. *S.*

caespitosa, (E. J. 2f.) panicle diffuse : florets about the length of the calyx : awn short, straight : leaves flat. Wet. 18 i.

aristulata, T. (Au 2f.) panicle capillary, spreading : branches whorled and flexuose : calyx 2-flowered, shorter than the florets : superior floret pedicelled ; lower valve of the corol truncate, laciniate, with an awn a little below the middle scarcely exsert. 2 f. Onondaga lake. *S.*

pumila, Ph. (J. 2f.) panicle small, fastigiate, few-flowered : pedicels short : florets awnless, obtuse, twice as long as the calyx : valves with membranaceous margins : leaves flat, smooth : culm erect, scarcely longer than the leaves. 1 i. In close tufts.

Southern.

capillacea, Lk. (E.) panicle capillary, very large, diffuse: florets not awned, longer than the calyx; one on a footstalk. 8 i.

obtusata, Mx. (March. 2f.) leaves flat: panicle contracted: flowers smooth, obtuse; the interior valve of the calyx obliquely truncate. 2 f.

aquatica, W. (M. 2f.) panicles spreading, half-whorled: flowers beardless, obtuse, smooth, longer than the calyx: leaves flat: culm creeping. Water. Lolium.

13—1. AJUGA. 42. 39.

chamaepithys, W. (E. y. J. ☼.) leaves 3-cleft: flowers axillary, solitary, shorter than the leaves: stem diffused. Synandra.

4—1. ALCHEMILLA. 35. 92.

alpina, (lady's mouth. A. w. 2f.) leaves digitate, serrate at the extremities, white-satiny beneath. Ictodes.

21—5. ALECTORIA. 57. 2.

jubata, (negro-hair.) frond terete, glossy, livid-brown and black, very branching; branches filiform, pendulous, compressed at the axils: receptacles of the same colour, at length convex, entire at the margin. Found on fire-wood brought to market in Troy and Albany. Var. *chalybeiformis*, frond and its branches more simple, zigzag, twisted, complicate, somewhat rigid, lead-brown, decumbent.

usneoides, frond flat-compressed, striate longitudinally, very branching, pale-white: branches fibrous: receptacles flat, of the same colour, entire. On trees. Ramalina.

6—1. ALETRIS. 10. 16.

farinosa, (false aloe, unicorn-root, false star-grass. y. 2f.) stemless: leaves linear-lanceolate, withering at the tips: scape with alternate pedicelled, mostly farinaceous, flowers. This plant grows plentifully in Brimfield, (Mass.) Here the inhabitants use the root as a tonic, which at the same time serves as a moderate cathartic. The root is intensely bitter. Meadows. *S.*

aurea, Mx. (yellow star-root. y. Ju. 2f.) flowers sub-sessile, short-tubular, sub-campanulate: fertile corols rugose, very scabrous: leaves lance-ensiform, acute. *S.* Hemerocallis.

6—13. ALISMA. 5. 13.

plantago, (water plantain. O. w. Ju. 2f.) leaves ovate or heart-ovate, obtuse or abruptly acuminate, 5 to 9-nerved: fruit 3-cornered: flowers whorled. Var. *parviflora*, flowers smaller: leaves about 5 or 7-nerved. Difference scarcely sufficient for a variety. Wet and water. *S.*

subulata, Clayton, (E. A.) small: leaves linear, subulate: umbels simple. Wet. Flowers large. *S.*

natans, W. (L. Ju. 2f.) leaves ovate, obtuse: peduncles solitary. Water, or wet. Trientalis.

4—1. ALLIONIA. 48. 56.

Southern.

albida, Wr. (E. Ap. ☼?) leaves opposite, oblong-lanceolate, sub-scabrous: peduncles opposite, solitary and clustered: involucre 5-cleft.

nyctagynia, Mx. (W. Ju. 2f.) stem erect: leaves broad-cordate, acute, glabrous: peduncles solitary: fruit-bearing calyx sub-hirsute much smaller than the broad involucre. Resembles Mirabilis.

ovata, Ph. (W. Au. ☼.) stem diffused, dichotomous: leaves ovate, a little scabrous or naked: flowers terminal; fascicle-racemed: involucre half 5-cleft; divisions round, acutish, net-veined.

linearis, Ph. (W.) stem erect, terete: leaves linear, somewhat fleshy: flowers racemed; pedicels aggregated: stamens very exsert.

hirsuta, Ph. (W.) stem erect, angled: leaves lanceolate, nerved, hirsute both sides: calyx very hirsute, sub-3-flowered. Rubia.

6—1. Allium. 9. 16.

canadense, (meadow garlic. W. M. 2f.) scape naked, terete: leaves linear: head bulbiferous. 18 i. *S.*

vineale, (field garlic. p. J. 2f.) cauline leaves rounded, fistulous: umbels bulbiferous: stamens alternately tricuspidate. 8 i.

triflorum, (mountain leek, A. M. 2f.) scape naked, terete, shorter than the leaves: leaves lanceolate, nerved: umbels few-flowered.

cernuum, Roth. (r. Ju. 2f.) scape naked, quadrangular, umbelliferous: leaves linear, nearly flat: umbel cernuous: stamens simple: germ 6-toothed. 18 i. *S.*

tricoccum, A. (three-seed leek A. w. J. 2f.) scape naked, nearly terete: leaves lanceolate-oblong, flat, smooth: umbel globose: seeds solitary.

Exotic.

cepa, (garden onion. Ju. 2f) scape naked, swelling towards the base, longer than the terete leaves.

fistulosum, (welch onion. 2f.) scape naked, equalling the terete ventricose leaves.

schœnoprasum, (cives. Ju. 2f.) scape naked, equalling the leaves which are terete-filiform.

oleraceum, (striped onion. 2f.) stem terete-leaved, bulb-bearing: leaves scabrous, semi-terete, sulcate beneath: stamens simple.

ascalonicum, (shaliot. Ju. 2f) scape naked, terete: leaves subulate: umbels globose: stamens tricuspidate.

porrum, (leek. Ju. 2f.) stem flat-leaved, umbelliferous: stamens tricuspidate: leaves sheathing at the base.

sativum, (garlic. Ju. 2f.) stem flat-leaved, bulb-bearing; bulb compound: stamens tricuspidate.

fragrans, (false snowdrop. w. M. 2f.) scape terete: leaves linear, keeled, obtuse, contorted: peduncles naked: stamens flat.

senescens, (false narcissus. 2f.) scape naked, 2-edged: leaves linear, convex under side, smooth: umbel round: stamens subulate.

Southern.

striatum, Ph. (E. w. March. 2f.) scape naked, slightly 3-angled: leaves linear, concave, streaked on the back: corol expanding: stamens simple included.

mutabile, Mx. (E. g-r M. 2f.) scape terete: leaves linear, flat: umbel many-flowered: stamens simple, included: seeds solitary. 2 f.

stellatum, leaf linear, channelled, keeled underside: flowers in fastigiate umbels, numerous: spathe acute: the 3 outer petals shorter, sub-obtuse: capsule turbinate-3-sided: cells 2-seeded

anguiosum, (2f.) scape naked, 2-edged: leaves linear, channelled, sub-angular beneath: umbels fastigiate. Damp. Hypoxis.

19—4. Alnus, W. (1) 50. 99.

incana, W. (♄) leaves oblong, acute, pubescent beneath: axils of the veins naked: stipules lanceolate.

undulata, W. (2) (waved alder. Muh. says it grows in New England. ♄.) leaves oblong, acute, rounded at the base: petioles and veins hairy beneath; axils of the veins naked: stipules ovate-oblong.

serrulata, (alder O. r-g. Ap. ♄.) leaves obovate, acuminate: veins and their axils hairy beneath: stipules oval, obtuse. 9 f. *S.*

glutinosa, (Ap. ♄.) leaves round-wedge-form, obtuse, glutinous: axils of the veins downy.

glauca, Mx. (A. March. ♄.) leaves oblong, acute, doubly serrate, glaucous beneath; axils of the veins naked: stipules naked. Called black alder. Bœhmeria.

(1) Betula, L. (2) crispa.

3—2. Alopecurus. 4. 10.

pratensis, (meadow grass, foxtail. J. 2f.) culm erect, smooth: spike cylindric, obtuse, lobed: calyx ciliate, somewhat villose, connate below the middle: corol as long as the calyx.

geniculatus, M. (floating foxtail. Ju. 2f.) culm ascending, geniculate: spike cylindrical: glumes a little connate at the base, hairy on the back and margin: corol truncate: styles free. 18 i. *S.* Phleum.

Alsine. Stellaria.

15—13. Althæa. 37. 74.

officinalis, (marsh-mallows. 2f.) leaves downy, oblong-ovate; obsoletely 3-lobed, toothed.

Exotic.

rosea, (hollyhock. ♂.) stem erect: leaves rough, heart-form, 5 to 7-angled; crenate.

ficifolia, (fig-hollyhock. ♂) leaves 7-lobed, sub-palmate, obtuse.

Malva.

14—1. Alyssum. 39. 63.

hyperboreum, W. (W.) stem herbaceous: leaves hoary, toothed: stamens 4, 2-forked.

dentatum, N. (E. 2f.) stem erect: racemes panicled, axillary: radical leaves sub-runcinate; cauline ones lance-linear, sessile, sub-entire: silicle terminated by a style about its own length, and with a peduncle still longer. Draba?

Indovicianum, N. (W. y. Ap. 2f.) silver-downy: stems numerous, simple, angular: leaves linear-spatulate, entire, obtuse, attenuated. Myagrum?

Lepidium.

21—6. Amanita. 58. 1.

1. *Stipe surrounded with a distinct volva at the base, naked at the top.*

livida, pileus bossed, flattish, striate, lead-livid: lamellæ white: stipe long, white. Margins of woods.

spadicea, pileus sub-campanulate, bossed, striate, fragile, chesnut-brown: lamellæ white: stipe scaly, sooty-yellow.

pusilla, pileus hemispheric, bossed: lamellæ ventricose, rose colour: stipe shortish, white: volva often 4-cleft. In gardens, &c. autumn.

2. *Stipe with a manifest volva at the base, and a ring at the top.*

bulbosa, wholly white; pileus convex: stipe elongated, attenuated, bulbous. Woods in autumn. Stipe about 3 inches long, quarter thick.

citrina, pileus glabrous, citron-yellow: lamellæ white: stipe white.

3. *Stipe with a ring at the top, volva at the base obliterated: warts on the pileus small, equal.*

umbrina, pileus flattish, from sooty-yellow becoming chesnut-brown: warts, lamellæ, and stipe, white. In beech wood.

aspera, pileus fleshy, compact, bossed, dark reddish-yellow, rough with acute warts: lamellæ crowded, white: stipe long, sub-bulbous having fibres.

Agaricus.

19—5. Amaranthus. 54. 80.

albus, W. (white coxcomb. g-w. Ju. ☼.) glomerules axillary, triandrous: leaves obovate, retuse: stem 4-cornered, simple. Common garden weed.

græcizans, W. (Au. ☼.) glomerules axillary, triandrous: flowers 3-cleft: leaves obovate, emarginate: stem teretish, branching.

oleraceus, (pot amaranth. Ju. ☼.) glomerules axillary, branching: leaves wrinkled, oblong, very obtuse, emarginate. Sometimes the flowers are pentandrous.

hybridus, W. (Ju. ☼.) racemes pentandrous, doubly compound, heaped together, erect: leaves ovate-lanceolate.
paniculatus, W. (Ju. ☼.) racemes pentandrous, triply-compound: branches spreading, pubescent: leaves ovate, lanceolate.
retroflexus, W. (rough amaranth. O. Au. ☼.) racemes pentandrous, triply-compound, compact, erect: branches pubescent: leaves ovate, undulate.
hypochondriacus, W. (spleen amaranth. Au. ☼.) racemes pentandrous, compound, compact, erect: leaves oblong-lanceolate, mucronate. Leaves red. (False prince's-feather.)
spinosus, W. (Au. ☼.) racemes pentandrous, terminal, compound: axils spinose.
pumilus, R. (dwarf amaranth. g.) glomerules axillary: flowers pentandrous: calyx 5-leaved, concave: leaves ovate, obtuse, smooth and fleshy, sometimes retuse. Scarcely twelve inches high.
sanguineus, (g. Ju. ☼.) flowers pentandrous, in decompound, erect, clustered racemes: leaves ovate-lanceolate.
blitum, (g. Ju. ☼) racemes triandrous, sub-spiked: flowers 3-leaved; leaves ovate, retuse: stem spreading, or prostrate.

Exotic.

melancholicus, (love-lies-bleeding. r. ☼.) glomerules axillary, peduncled, roundish: leaves lance-ovate, coloured.
tricolor, (three-coloured coxcomb. Ju. ☼.) glomerules sessile: leaves lance-oblong, coloured.
lividus, (lead amaranth. Ju. ☼.) glomerules triandrous, sub-spiked, roundish: leaves oval, retuse: stem erect. Xanthium.

6—1. AMARYLLIS. 9. 17.

atamasco, (atamasco lily. w. & r. J. 2ℓ.) spathe 2-cleft, acute: flower pedicelled: corol bell-form, sub-equal, erect: stamens declined. *S.*

Exotic.

formosissima, (jacobea. 2ℓ.) spathe 1-flowered: corol ringent-like: petals declined. Allium.

19—5. AMBROSIA. 54. 98.

trifida, W. (g-y. S. ☼.) bristly, rough: leaves 3-lobed, serrate; lobes oval, lanceolate, acuminate: fruit 6-spined, beneath the apex. From 5 to 8 feet high.
integrifolia, W. (Ju. ☼.) leaves ovate, sessile, acuminate, serrate, bristly on both sides, ciliate at the base: racemes terminal, sometimes ternate. Flowers very inconspicuous.
elatior, W. (hogweed. O. S. ☼.) leaves doubly pinnatifid, smoothish: petioles long, ciliated: racemes terminal, panicled: stem wand-like. *S.*
artemisifolia, W. (S. ☼.) leaves doubly-pinnatifid, hoary beneath, at the summit pinnatifid: racemes terminal in threes: branches level-topped. *S.*
paniculata, W. (J. ☼) leaves glabrous, doubly pinnatifid, pinnatifid at the summit: racemes terminal, solitary: branches level-topped.
heterophylla, W. (S. ☼) cauline leaves pinnatifid, sub-toothed, petioled; on the upper branches lanceolate sessile: petioles long ciliate: racemes terminal, solitary: stem panicled.
bidentata, Mx. (W. Ju. ☼.) very hirsute: leaves closely sessile, simple, oblong, one-toothed on each side above the spreading base: fruit 4-cornered, 4 spined below the apex.

Southern.

hispida, Ph. (E. w. ☼.) white-hispid on all parts: leaves 2-pinnatifid: divisions gashed: racemes sub-panicled, terminal. Flowers large. 1. f.
tomentosa, N. (W. 2ℓ.) leaves 2-pinnatifid, under side white, downy: spike solitary. 18 i. Schisandra.

Amellus. Eclipta.

4—1. Ammania. 17. 91.

ramosior, (E. w-p. Au. ☼.) stem erect, thick, subterete: leaves lanceolate, dilated at the base; lower flowers compactly whorled. Salt meadows. 6 i.
humilis, Mx. (E. w-r. Au. ☼. ♂.) stem procumbent at the base, branched, slender, quadrangular: leaves lanceolate, slender at the base: flowers solitary. Stem red. 6 i. Petela.

Ammi. Sison.

Ammyrsine. Leiophillum.

16—10. Amorpha. 32. 93.

fruticosa, (Var. *emarginata*, T.) (E. P. Ju. ♄.) smooth, sub-arborescent: leaves petioled, emarginate; spikes aggregated, long: calyx hoary, pedicelled, one of the teeth acuminate, the rest obtuse: legume few-seeded. *S.*

Southern.

pubescens, Ph. (E. w. J. ♄?) small shrubby; leaves on very short petioles, obtuse at each end, hairy: spikes long, panicled, hairy: calyx sub-sessile with acuminate teeth. 3 f.
nana, N. (W. p-b. M. ♄.) leafets sub-ovate or oval, mucronate and smooth: spikes solitary and aggregated: flowers pedicelled: teeth of the calyx setaceously acuminate: legume 1-seeded. On grassy woodless hills. 9 i.
canescens, N. (W. b. ♄?) somewhat woody, white-villous; leafets near each other, sub-sessile, oval-ovate, mucronate: spikes aggregated: flowers sub-sessile: teeth of the calyx equal; ovate, acute. 18 i. Lupinus.

5—1. Ampelopsis. Mx. 46. 72.

quinquefolia, M. (1) (false grape, creeper. O. w. Ju. ♄.) leaves in fives, toothed: stem rooting, climbing. *S.* Var. *hirsuta.*
cordata, Mx. (W. ♄.) leaves cordate, acuminate, toothed and angular: nerves pubescent beneath: racemes 2-parted.

Southern.

bipinnata, Mx (E. J. ♄.) leaves doubly pinnate: leafets lance-ovate, deeply toothed and lobed: flowers in corymbs. Ribes.

16—10. Amphicarpa. N. (2) 32. 93.

monoica (wild bean-vine. O. b. &. w. Ju. ☼.) stem slender, twining, hairy backwards: leaves ternate, ovate, nearly smooth; stipules ovate, striate. Var. *comosa*, has hirsute leaves. Twining. 4 f.
sarmentosa, W. (w. Au.) leaves ternate, ovate, glabrous: racemes filiform, generally 3-flowered; flowers apetalous: pods oblong, 2-seeded. Twining. Galactia.

18—5. Amsonia. 30. 47.

Southern.

latifolia, Ph. (E. b. Ap. ♃.) stem glabrous: leaves lance-oval, upper ones acuminate, pubescent on the under surface of the nerves. 2 f.
salicifolia, Ph (E. b. M.) stem smooth: leaves lance-linear, acute at each end, very glabrous.
angustifolia, Mx. (E. b. Ap.) stem hairy; leaves narrow-linear, numerous, erect, hairy. 2 f. Stylandra.

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(1) Hedera quinquefolia, L. Cissus hederacea, P. Vitis quin. Lk.
(2) Glycine, L.

11—1. AMYGDALUS. 36. 92.

Exotic.

persica (peach r. M. ♄.) serratures of the leaves all acute, flowers sessile, solitary. 15 f.

nana (flowering almond. ♄.) leaves ovate, tapering to the base, sharply serrate. 3 f. Armeniaca.

5—1. ANAGALLIS. 20. 34.

arvensis (red chickweed, scarlet pimpernell. r. J. ☼.) stem spreading, naked, procumbent: petals entire, flat, with hairs at the margin. *S.* Lysimachia.

Anatherix. PODOSTIGMA.

Anatherum. ANDROPOGON.

5—1. ANCHUSA. 41. 42.

Exotic.

officinalis (buglos. y. 2f.) leaves lanceolate: spikes imbricate, one-sided: bracts ovate. Symphitum.

Andrewsia. BARTONIA.

5—1. ANDROCERA. N. 28. 41.

Southern.

lobata, N. (W. J. ☼.) prickly, hirsute: leaves in pairs, lobe-pinnatifid; segments obtuse, obsoletely crenate, undulated: rascemes lateral, many-flowered. The Solanum heterandrum of Ph. Campanata.

10—1. ANDROMEDA. 18. 51.

hypnoides, W. (moss-bush. Whitehills. Au. ♄.) leaves imbricate subulate, glabrous: peduncles solitary, terminal, 1-flowered: corol nodding, globoso-bell-form. Small, creeping.

mariana, W. (J. ♄.) leaves oval, entire, sub-acute at both ends, glabrous, leathery, paler beneath: flower-bearing branches almost leafless; peduncles fascicled: corol ovate-cylindric: calyx leafy: anthers beardless: capsule ovate, and resembling the form of a pine-apple. One variety has narrow lanceolate leaves. *S.*

polifolia, Mx. (A. r-w. M. ♄.) leaves linear-lanceolate, convex, revolute, white-glaucous beneath and hoary-glaucous above: flowers aggregate, terminal: corol sub-globose: anthers bearded towards the top. One foot high. Wet.

arborea, W. (sorrel tree. w. Ju. ♄) branches terete: leaves oblong, acuminate, mucronate-serrate, glabrous: panicles terminal, many-spiked: corol ovate-cylindric, pubescent: anthers linear, beardless. About 40 feet high, with acid leaves. *S.*

paniculata, M. (1) (white bush. O. w. J. ♄.) pubescent: leaves obovate-lanceolate, acute, sub-entire: flower bearing branches terminal panicled, naked-ish: glomerules peduncled: corol sub-globular, pubescent: anthers obtuse, beardless. A shrub running into several varieties—flowers small. *S.*

racemosa, W. (O. w. J. ♄) leaves oval-lanceolate, acute, serrulate, membranaceous, glabrous: spikes terminal, one-way, elongated, simple or branched: bracts linear, acute: corol cylindric: calyx acute, with bracts at the base: anthers doubly 4-bearded at the apex. A middling sized shrub, odoriferous. Wet. *S.*

calyculata, W. (leather leaf. O. w. M. ♄.) leaves lanceolate-oblong, obsoletely serrulate, sub-revolute, with scaly dots, rust-coloured beneath: racemes terminal, leafy, turned one-way: pedicels short, solitary, axillary: calyx acute, 2-bracted at the base: bracts broad-ovate, acuminate: corol oblong-cylindric. Wet. 2 f. *S.*

(1) Lyonia paniculata. N.

Southern.

augustifolia, (E. Ap.) leaves linear-lanceolate, acute, with scaly dots: bracts 2 and minute, acute: racemes terminal, leafy, secund: peduncles solitary, axillary.

nitida, W. (E. w. r. March. ♄.) very glabrous: branches flexuous, 3-angled; leaves oval, acuminate, entire, 3-nerved: peduncles clustered, 1-flowered, axillary: corol cylindrical: anthers at the base 2-horned. 5 f.

rhomboidalis, P. (E.) flower-bearing branches 3-angled: leaves rhomboid and lanceolate, entire, glabrous, terminated by a gland: peduncles clustered, axillary.

axillaris, (E. w. March. ♄) leaves oval-lanceolate, acuminate, coriaceous, lucid, with spiny serratures: racemes axillary, closely flowered: corol oblong-ovate: anthers at the summit 2-horned. 3 f.

acuminata, Ph. (E. w. Ap. ♄.) very glabrous: leaves lance-ovate, tapering towards the apex and acuminate, nearly entire, coriaceous, reticulate: racemes axillary: corol cylindrical: anthers unawned, gibbous near the base. 11 f.

floribunda, Ph. (E. w. M.) very glabrous: leaves oblong ovate, acute, slightly serrulate, coriaceous: racemes secund, axillary, and forming terminal panicles.

ferruginea, (E. w. J. ♄.) shrubby: leaves coriaceous, distant, on long petioles, obovate, generally obtuse, entire, with dust-like scales, and veiny beneath: pedicels aggregate, 1-flowered, axillary: corol globose: anthers unawned. Sand. 4 f.

rigida, Ph. (E. Ap. ♄.) leaves crowded on short petioles, lanceolate, acute at both ends, scaly and tomentose beneath, without veins: pedicels aggregate, axillary, 1-flowered. corol nearly globose: anthers unawned. 18 f.

ligustrina, (E. w. M ♄.) pubescent: leaves obovate, lanceolate, acuminate, very finely serrulate; flower-bearing branches terminal, paniculate, naked: corol nearly globose: anthers unawned. 10 f.

frondosa, M. (E. w. M. ♄.) pubescent: leaves obovate-lanceolate, acute, serrulate, tomentose; flower-bearing branches paniculate, leafy: corol globose: anthers awned. 4 f.

speciosa, (E. w. ♄.) leaves oval-obtuse, mucronate, crenate, reticulate: racemes naked, aggregate: corol campanulate: anthers 4-awned. 4 f.

tetragona, (W. w. M. ♄.) leaves imbricate, keeled, naked at the margin: peduncles axillary, solitary, filiform, 1-flowered: corol nodding, bell-form. Kalmia.

3—2. ANDROPOGON. 4. 10.

scoparius, Mx. (O. Au. 2ℓ.) spikes simple, lateral and terminal, pedunculate, in pairs: rachis hairy: abortive floret neuter: valves awned. *Purpurascens.* W. *S.*

virginicus, (broom-grass. 2ℓ.) culm compressed: superior leaves and sheaths smooth: spikes short, 2 or 3 from each sheath, partly concealed at the base: rachis sub-terete: abortive flower a mere pedicel without valves: perfect flowers monandrous.

furcatus, W. (O Au. 2ℓ.) spikes digitate, generally by fours: abortive flower staminiferous, awnless, resembling the perfect one, the awn of which is subcontorted. *S.*

macrourus, Mx. (indian-grass. S. 2ℓ.) spikes fasciculate, in dense lateral and terminal fastigiate panicles: flowers monandrous: awn straight: abortive floret without valves. *S.*

nutans, (Au. 2ℓ.) panicle oblong, branched, nodding: spikelets by pairs: calyx hairy, rufescent: awn contorted.

Southern.

secundus, E. (E. S. 2ℓ.) panicle sparingly branched, erect, secund: peduncles 3-flowered: staminate flower subulate, villous; the perfect sessile one, with one valve very villous.

ciliatus, E. (E. S. 2f.) panicle oblong, terminal: branches glabrous: flowers in pairs: calyx hairy: corol ciliate, with a contorted awn. 3 f.

ambiguus, Mx. (E. S. 2f?) spikes panicled: flower solitary, remote; the exterior valve of the corol awned at its summit; the interior at its base. Sand. 18 i.

melanocarpus, (S.) spikes clustered: flowers solitary, with an involucre, awn very long. 3 f.

ternarius, Mx. (A.) branches remotely alternate, 3-spiked; spikes conjugate; hair of the involucre shorter than the glume: flowers triandrous.

argenteus, E. (E. Oc. 2f.) panicle long, slender; branches solitary and in pairs: spikes conjugate, longer than the sheath, covered with white silvery hairs.

vaginatus, E. (E. Oc. 2f.) panicle slender, close pressed: spikes solitary, conjugate, shorter than the sheaths: flowers in pairs; the perfect one awned; the awn straight, scabrous.

tetrastachyus, E. (E. Oc.) panicle slender, erect: spikes solitary, 4-cleft: flowers in pairs; the perfect one awned; leaves hairy. 3 f.

bicornis, W. (E.) spikes conjugate, panicled: panicle bracted, corymbed, fastigiate: flowers ternate, awnless; middle one perfect, sessile; lateral one neutral, pedicelled; cilliae of the rachis very long.

glaucus, T. (W.) smooth, glaucous: culm sub-simple: nodes smooth: panicle terminal, much exert, oblong; spikes alternate, crowded; awns long, twisted: abortive floret neuter unarmed, 1-valved. 2 f. Hordeum.

5—1. ANDROSACE. 20. 34.

Southern.

occidentalis, Ph. (W. ☼.) very slenderly pubescent: leaves (or involucres) oblong-spatulate, entire: perianths angled: capsule shorter than the calyx.

carinata, T. & J. (James Peak. w. J. 2f.) leaves crowded, lance-ovate, acute, entire, keeled; margin ciliate: umbels few-flowered; leafets of the involucre linear-oblong: corol exceeding the ovate calyx; divisions obovate, entire.

septentrionalis, (W. ☼.) leaves lanceolate, toothed, glabrous, shining: perianth angled, shorter than the corol. Phacelia.

12—13. ANEMONE. 26. 61.

virginiana, (wind-flower. O. g-w. Ju 2f.) stem dichotomous: leaves in threes, ternate, upper ones opposite; leafets gash-lobate and serrate-acute: peduncles solitary, 1-flowered, elongated: seed oblong, woolly, mucronate, in heads. 18 i. *S.*

aconitifolia, Mx. (1) O. w. J. 2f.) stem dichotomous: radical leaves palmate; cauline leaves sessile, clasping, 3-cleft; the lower ones ternate, with the lobes acute-lanceolate, gash-serrate; peduncles solitary, 1-flowered; seed in globose heads, naked, subulate-beaked. Flowers large. 15 i. *S.*

dichotoma, (2) (w-r. M. 2f.) stem dichotomous: cauline leaves all opposite, clasping, 3-cleft: lobes wedge-lanceolate, with the upper ones gash-serrate: peduncles solitary, 1-flowered: seed in a globose head, naked, recurved-mucronate.

nemorosa, (low anemone. O. r-w. M. 2f.) stem 1-flowered: cauline leaves in threes, ternate; leafets wedge-form, gash-lobed, toothed, acute: corol 5-6-petalled: seeds ovate, with a short style, hooked. A variety, *quinquefolia*, has lateral leafets deeply 2-cleft. 6 i. *S.*

lancifolia, (w. M. 2f.) stem 1-flowered: cauline leaves in threes, ternate: leafets lanceolate, crenate-toothed: corol 5-petalled: seeds ovate, with a short style hooked.

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(1) pensylvanica, L. (2) irregularis, Lk.

thalictroides, (1) (rue anemone. O. w. M. 2ℓ.) umbels involucred: radical leaves twice ternate, leafets sub-cordate, 3-toothed: involucre 6-leaved; leafets petioled, uniform: umbel few-flowered: seed naked, striate: root tuberous. A variety, *uniflora*, has a 1-flowered involucre. 6 i. *S.*

narcissiflora, W. (W. w. Ap 2ℓ.) flowers umbelled, involucred: radical leaves palmate-many-cleft, gashed; divisions linear: involucres sessile, gashed: umbels few-flowered: pedicels longer than the involucre.

cuneifolia, Ph. (w. Ap. 2ℓ.) stem 1-flowered, involucred: leaves ternate; leafets sessile, wedge-form, truncate-crenate at the apex: involucre 3-leaved: corol 5-petalled: seed head-globose, acuminate, woolly.

Exotic.

hortensia, (garden anemone.) radical leaves digitate; divisions 3-cleft; cauline ones ternate, lanceolate, connate, sub-divided: seed woolly.

Southern.

caroliniana, W. E. (2) (O. w. March. 2ℓ.) leaves ternate: leafets notched and serrate: involucre 3-leaved, each 3-cleft: petals 14 to 20, oval; the outer one sub-coriaceous.

walteri, Ph. (E. 2ℓ.) radical leaves palmate, long-petioled: scape long, erect, 1-flowered: petals 3: root tuberous.

ludoviciana, N. (W. r-b. Ap. 2ℓ) scape 1-flowered, involucred, soft-woolly: leaves digitate, many-cleft, upper surface smooth; segments entire, linear, acute: petals 6, oblong-ovate, erect. Trollius.

Anemone. HEPATICA.

5—2. ANETHUM. 45. 60.

Exotic.

graveolens, (dill.) fruit compressed: plant annual.

foeniculum, (fennel.) fruit ovate: plant perennial. Peucedanum.

5—2. ANGELICA. 45. 60.

triquinata, Mx. (3) (angelica O. w. Au. 2ℓ.) stem terete, pubescent above: leaves ternate, very smooth; partitions quinate; leafets oblong-ovate, equally serrate; lower ones 2-lobed at the base. 4 f. *S.*

atropurpurea, (angelica. O. g-w. J. 2ℓ.) stem smooth, coloured: leaves ternate; partitions sub-quinate: leafets ovate, acute, gash-serrate, sub-lobed; 3 terminal ones confluent: petioles very large, inflated. Wet meadows. Root purplish. This is the true aromatic angelica. 4 f. *S.*

lucida, (2ℓ.) leafets equal, ovate, gash serrate: radical leaves 3-pinnate, cauline one 2-pinnate. 18 i. *S.*

Exotic.

archangelica, (archangel. ♂.) leaves with the odd terminal leafet lobed. Cnidium.

21—2. ANOECTANGIUM. 56. 4.

filiforme, Mx. stem slender-filiform: leaves closely imbricate, oval, denticulate in a similar-coloured point: capsule ciliate at the apex: lid sub-conic: calyptre sub-villose. On rocks. Tetraphis.

17—2. ANTHEMIS. 49. 55.

arvensis, (w-y. Ju. ♂) receptacle conic, chaff-lanceolate: seed crown-margined: leaves 2-pinnate, sub-divided; segments lance-linear. 8 i.

cotula, (mayweed. O. w. J. ☼.) receptacle conic, chaff-bristly: seed naked: leaves 2-pinnate, leafets subulate, 3-parted. 10 i. *S.*

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(1) Thalictrum anemonoides, Mx. (2) tenella, Ph. (3) Ferula canadensis?

Exotic.

achillis, (chamomile. w. Au. 2f.) leaves 2-pinnate ; leafets 3-parted, linear-subulate, sub-villous : stem branching at the base. Fragrant. In 1820, I saw this plant growing wild very extensively, in cultivated fields in Pittsfield, Mass. 4 i. Achillea.

21—3. ANTHOCEROS. 57. 3.

levis, (wax liverwort) frond flat, undivided, scarcely undulated at the margin. On the earth in damp shaded situations.

punctatus, frond sinuate, undivided, crisped at the margin. On the earth where moist and shaded.

carolinianus, Mx. fronds with short roundish lobes, margin sub-entire, scarcely punctured above ; the horn-form capsule about half an inch in length. Marchantia.

Anthopogon, GYMNOPOGON.

2—2. ANTHOXANTHUM. 4. 10.

odoratum, (sweet vernal grass. O. M. 2f.) spike oblong-ovate ; florets sub-pe duncled, shorter than the awn. An American variety, *altissimum*, is larger and of a darker green. Ives. An elegant substitute for the Leghorn grass. Dewey. 10—18 i. *S.* Crypta.

13—2. ANTIRRHINUM. 40. 40.

elatine, W. (creeping snap-dragon. y. Ju. ☼.) procumbent pilose : leaves alternate, hastate, entire : peduncles solitary, very long.

linaria, (snap-dragon. y. Ju. 2f.) erect, glabrous : leaves scattered, lanceolate-linear, crowded together : spikes terminal, dense-flowered : calyx glabrous, shorter than the spur. Flowers large—(toad-flax.) Naturalized. 12—18 i.

canadense, W. (flax snap-dragon. w-b. J. 2f.) rising in a curve, glabrous, simple : leaves scattered irregularly, erect, narrow, linear, obtuse, remote : flowers racemed : scions procumbent. Flowers small. *S.*

Exotic.

orianthophorum, (three-birds.) leaves whorled, lanceolate, 3-nerved : stem decumbent : racemes terminal, few-flowered. Flowers large. Collinsia.

Anychia, QUERIA.

17—1. APARGIA. 49. 53.

autumnalis, W. (1) (false hawkweed. Boston. y. J. 2f.) scape branching, scaly : leaves lanceolate, runcinate-pinnatifid, smoothish. Naturalized. Bw.

Southern.

tenellum, Ph. (W. b. Ju. ☼.) small, simple, glabrous : leaves opposite, linear, acute : flowers axillary, short peduncled : calyx bell-form.

erotium, W. (E. p. Ju. ☼.) erect, branching, hairy : leaves alternate, lanceolate : flowers sub-spiked : calyx digitate, longer than the tailless corol. Leontodon.

4—2. APHANES.

Southern.

arvensis, (ladie's mantle. E. M. ☼.) leaves 3-parted : divisions 3-cleft, hairy : flowers axillary, glomerate : monandrous. Ilex.

16—10. APIOS. 32. 93.

tuberosa, Ph. (ground-nut. O. dark p. Ju. 2f.) stem twining : leaves pinnate, with 7 lance-ovate leafets : racemes shorter than the leaves : root tuberous.

(1) Leontodon.

farinaceous, in taste resembling the cocoa-nut, and highly nutritious. This plant should be cultivated in moist rich soil, for food.

5—2. Apium. 45. 60.

Exotic.

petroselinum, (parsley. Ju. ♂.) cauline leaves linear: involucre minute.
graveolens, (celery. Ju. ♂.) stem channelled: cauline leaves wedge-form.
Coriandrum.

18—5. Apocynum. 30. 47.

androsaemifolium, (dog-bane. O. r-w. J. 2f.) stem erect and branching: leaves ovate, glabrous: cymes lateral and terminal: tube of the corol longer than the calyx, with a spreading limb. 3 f. *S.*
cannabinum, Mx. (1) (indian hemp. O. g-y. Ju. 2f.) stem erect and branching: leaves oblong-oval, hoary beneath, and downy when young (more or less glabrous in maturity:) cymes lateral and terminal; pubescent when young (more or less glabrous in maturity:) tube of the corol about equal to the calyx, with an erect limb. 3 f.
hypericifolium, A. (2) (St. John's dog-bane. g-w. Ju. 2f.) stem erectish and branching: leaves lanceolate, glabrous, mucronate; lower ones sub-cordate at the base: cyme-panicles shorter than the leaves: tube of the corol about equal to the calyx. 3 f. Gonolobus.

Remark. Dr. Torrey says he follows R. Brown in the species of this genus, in which he finds some confusion. Brown seems to have forced in an additional species, not found in nature. See Darlington, page 31. The two first species have lately been much used in the cure of diseases, under the name, Wandering Milkweed, by a peculiar class of practitioners.

12—5. Aquilegia. 26. 61.

canadensis, (wild columbine. O. r. & y. Ap. 2f.) horns strait: stamens exsert leaves decompound. Growing frequently in crevices of rocks. 15 i.

Exotic.

vulgaris, (garden columbine. J. 2f.) horns incurved: leafy: stem and leaves glabrous: leaves decompound. The nectariferous horns become numerous by culture; one hollow horn within another. 15 i.

Southern.

caerulea, T. & J. (W. b. J. 2f.) horns straight, about twice as long as the limb of the petals: stamens and styles shorter than the corol: nectaries acute: segments of the leaves deeply lobed. 18 i. Ascyrum.

14—2. Arabis. 39. 63.

sagittata, (wall cress. w. J. ☼. ♂.) leaves sub-dentate, rough, with the pubescens often branched: radical ones ovate or oblong, attenuated into a petiole of the stem: lanceolate, sagittate-cordate: pedicels as long as the calyx: siliques straight and erect. 18 i.
thaliana, W. (mouse-ear cress. Ap. ☼.) leaves hairy, sub-dentate: radical ones oblong, petiolate: stem branched, hairy at the base: siliques ascending: pedicels much longer than the calyx. 3 f.
lyrata, W (w. A. ♂.) stem and upper leaves smooth and glaucous: radical leaves lyrate-pinnatifid, often pilose: stem branched at the base: pedicels much longer than the calyx. 10 i.
laevigata, (w. M. 2f.) stem leaves linear, oblong, sagittate, smooth; lower ones obovate: pedicels erect: siliques very narrow and long, at length pendulous. 2 f.
canadensis, Mx. (O. w. J. 2f.) stem leaves sessile, oblong, lanceolate, narrow

(1 & 2) pubescens, Br.

at the base, pubescent: pedicels pubescent, reflexed in the fruit: siliques pendulous, sub-falcate, nerved. 2 f. *S.*

rhomboidea, P. (spring cress. O. w. M. 2f.) leaves glabrous, rhomboidal, repand toothed, the lower ones nearly round, on long petioles: root tuberous. 15 i. Wet. *S.*

alpina, W. (A. w. J. 2f.) leaves lance-oblong, clasping, acutely toothed.

reptans, W. (Ju. 2f.) leaves roundish, entire, hirsute: having creeping shoots.

stricta, A. (O. M. 2f.) leaves toothed, obtuse, hispid; radical ones sub-lyrate: stem hispid: petals erect.

Southern.

pendula, W. (W. ☼.) leaves sagittate, oblong, clasping, entire, smooth: silique 2-edged, linear, pendulous.

hirsuta, S. (W. ♂.) leaves all hispid; cauline ones clasping: silique 4-cornered. Turritis.

16—10. ARACHIS. 32. 93.

Exotic.

hypogæa, (pea-nut, false ground-nut. ☼.) stem pilose, procumbent: leaves pinnate, abrupt: flowers axillary. Peduncles become elongated, and deposit fruit under ground to ripen. Erythrina.

5—5. ARALIA. 46. 59.

spinosa, W. (shot-bush, angelica tree. y-w. Au. ♄.) woody: stem and leaves thorny, leaves doubly pinnate; leafets slightly serrate: panicles very branching: umbels numerous. 5 f. *S.*

hispida, Mx. (bristly-stem sarsaparilla. A. w. J. ♄.) low, sub-shrubby: stem and petioles rough with bristles: leaves doubly pinnate; leafets ovate, gash-serrate, unarmed, glabrous: umbels with long peduncles. Neglected fields. 20 i.

racemosa, W. (spikenard. O. w. J. 2f.) spreading branches: petioles 3-parted, the partitions 3—5-leaved; leafets often heart-form: branchlets axillary, leafy: umbels many, sub-panicled, leafless above. Damp. 4 f. *S.*

nudicaulis, W. (wild sarsaparilla. O. w. M. 2f.) hardly a proper stalk, 1-leafed; the leaf twice-ternate, or once, and quinate: leafets oblong-oval: scape naked, shorter than the leaf: umbels few. Woods. 15 i. *S.*

Statice.

10—1 ARBUTUS. 18. 51.

uva-ursi, W. (bear-berry, kinnikinnick. O. w-r. M. ♄.) stem procumbent: leaves wedge-obovate, entire: berry 5-seeded. Dry, barren sand-plains, &c. Very abundant about the great lakes. Schoolcraft.

laurifolia, W. (W. ♄.) leaves oblong, acuminate at both ends, acutely serrate, glabrous: racemes axillary, one-sided, sessile, solitary.

menziesii, Ph. (W. ♄.) becoming woody: leaves broad-ovate, entire, glabrous, having long petioles: racemes axillary and terminal, panicled, dense-flowered.

tomentosa, Ph. (W. ♄.) becoming woody: branches hispid: leaves oval, acute, sub-cordate at the base, white-downy beneath, having short petioles: peduncles axillary, of the length of the leaves, bearing head-racemes: flowers bracted.

alpina, (w. M. ♄.) stem procumbent: leaves obovate, acute, rugose, serrate: racemes terminal. Epigaea.

17—1. ARCTIUM. 49. 54.

lappa, (burdock. O. r. Au. 2f.) cauline leaves heart-form, petioled, toothed flowers panicled, globose: calyx smooth. Onopordon.

21—6. Arcyria. 58. 1.

flava, rare, yellow, very long, capillary, nodding. On trunks.

cinerea, gregarious, white-cinereous, sometimes becoming rust-colour. On trunks in woods.

punicea, crowded together, between saffron colour and scarlet. On decayed trunks in summer and autumn. Stemonitis.

10—3. Arenaria. 22. 32.

1. *Leaves oblong.*

peploides, W. (Ju. 2f.) stem dichotomous: leaves ovate, acute, fleshy: calyx acuminate. 8—12 i.

lateriflora, W. (sand-wort. O. w. J. 2f.) stem filiform, simple: leaves ovate, obtuse, sub-triple-nerved: peduncles lateral, solitary, elongated, 2-cleft; one pedicel middle-bracted: corol longer than the calyx. 6—10 i.

serpyllifolia, W. (w. Ju. ☼.) stem dichotomous, spreading: leaves ovate, acute, sub-ciliate: calyxes acute, sub-striate: petals shorter than the calyx. 5 i. *S.*

2. *Leaves linear, subulate.*

glabra, Mx. (Shawangunk. 2f.) very glabrous, sub-erect, filiform, many stems: leaves subulate-linear, flat, spreading: pedicels 1-flowered, elongated, divaricate: leafets of the calyx oval, obtusish, smooth, shorter than the petals. 4—6 i.

stricta, Mx. (A. w. M. 2f.) glabrous, erect, many stems: leaves subulate-linear, erect: panicles few-flowered: petals much longer than the calyx, which is oval-lanceolate, apparently striate. Dry. 6—12 i.

squarrosa, Mx. (w. Ju. 2f.) turfy: lower leaves scaly-imbricate, channelled, glabrous: stems few, very simple: flowers few, terminal, erect: petals much larger than the roundish calyx. 6 i.

rubra, Mx. (r. J. ☼.) glabrous, humifuse: leaves filiform, fleshy, much longer than the joints: stipules connate-membranaceous, sheathing: stamens 5: capsule angular or globose. 8 i.

thymifolia, Ph. (Labrador. L. ☼.) stem dichotomous, diffuse: leaves oval, sub-acute: peduncles alternate, axillary, solitary, elongated: calyx acute: petals of the length of the calyx

canadensis, P. (L. r. J. ☼.) glabrous, humifuse: leaves linear, fleshy, internodes much longer: stipules membranaceous, connate, sheathing: stamens often but 5: capsules globose.

macrocarpa, (W. 2f.) cespitose: leaves crowded, linear-subulate, flat; margin ciliate: peduncles terminal, 1-flowered: leaves of the calyx linear: petals ovate, twice as long as the calyx: capsule thrice as long as the calyx.

fasciculata, W. (E. ☼.) sub-glabrous, cespitose: stems straight-erect: leaves subulate, pungent, striate: flowers dense-fascicled: calyx subulate, striate: petals very short.

laricifolia, W. (W. 2f.) pubescent, cespitose-many-stemmed: leaves setaceous: little stems 1 to 3-flowered, erect: leafets of the calyx linear, sub-hirsute, half as long as the petals.

juniperina, W. (Newfoundland. 2f.) sub-pubescent, erect, many-stemmed: leaves subulate, somewhat 3-sided, pungent: panicle terminal, dichotomous, many-flowered: leafets of the calyx lance-ovate, striate, mucronate, about half as long as the petals.

Southern.

diffusa, E. (E. w. Ap.) pubescent: stem diffuse, branching: leaves lance-oblong, acute at both ends: peduncles solitary, axillary, twice as long as the leaves: petals much shorter than the calyx.

patula, Mx. (W. 2f.) pubescent: stems filiform, panicled, many-flowered: leaves setaceous-subulate, spreading: petals sub-emarginate, longer than the acute striate calyx.

obtusa, T. (W. A. 2f.) cespitose, many-stemmed: leaves linear-subulate, obtusish, keeled, a little 1-sided: stem simple, mostly 1 flowered: peduncles with glandular hairs: nectaries oblong-obtuse, 3-nerved: petals about twice as long as the calyx: capsules ovate, shorter than the calyx. Hortensia.

18—1. ARETHUSA. 7. 21.

bulbosa, W. (arethusa. O. r. J. 2f.) leafless: root globose: scape sheathed, 1-flowered: calyx with the superior divisions incurved: lip sub-crenulate. Flowers large, sweet-scented. Damp.

medeoloides, Ph. (W. 2f.) leaves whorled, oblong, acuminate: stem with one sessile flower: 3 outer petals linear; inner ones short, oblong, obtuse: lips similar. Tipularia.

Arethusa, see TRIPHORA and POGONIA.

12—1. ARGEMONE. 27. 62.

mexicana, W. (y. Ju. ☼.) leaves pinnatifid, gashed, spinose: flowers axillary. Var. *albiflora*, leaves pinnatifid: flowers large. *S.*

3—2. ARISTIDA. 4. 10.

dichotoma, Mx. (O. S. ♂. 2f.) cespitose: culm dichotomous: flowers racemose-spiked: lateral awns very short, intermediate ones contorted. 8—12 i.

stricta, Mx. (E. 2f.) culm and leaves straight, erect: leaves pubeseent: raceme long, somewhat spiked, crowded: awn twice as long as the corol, spreading. 3 f. *S.*

purpuracens, (E. S. 2f.) culm filiform, erect, simple: leaves very narrow, flat: flowers in a long-spiked panicle: awns nearly equal, twice the length of the corol. 2 f. *S.*

Southern.

spiciformis, E. (S. 2f.) flowers crowded together, somewhat spiked: the middle awn villous at the base. 3 f.

gracilis, E. (S. 2f.) stem very slender: flowers in spikes; spikelets few-flowered, somewhat remote, oppressed: lateral awns short, erect; the intermediate longer, expanding. 1 f.

lanosa, M. (S. 2f.) panicle erect, appressed: flowers in racemes: calyx longer than the corol: sheaths of the leaves woolly. 2—4 f.

oliganthia, Mx. (J. 2f.) culm straight, sub-ramose: leaves convolute-filiform: flowers solitary, distant: awn long, divaricate.

fasciculata, T. (W.) culm filiform, erect, branched: leaves narrow, flat, smooth: panicle long, sub spiked: flowers in fascicles: calyx shorter than the corol: awns nearly equal, spreading, longer than the flower.

pallens, (W.) panicle few-flowered, pedicelled, alternately 2-flowered, approximate: awn capillary, very long: leaves filiform.

tuberculosa, N. (E.) culm erect, dichotomous, joints tumid, with small tubercles in the axils: panicles rigid: valves of the calyx keeled, with long subulate points: corol stiped; awns smooth, convolute. 3 f.

Saccharum.

18—6. ARISTOLOCHIA. 11. 23.

sipho, Hr. (birthwort. J. ♄.) leaves heart-form, acute: stem twining: peduncles 1-flowered, furnished with an ovate bract: corol ascending; limb 3-cleft, equal. A very high running vine, with large leaves: flowers yellowish-brown.

serpentaria, (O. p. J. 2f.) leaves heart-form, oblong, acuminate: stem zigzag, ascending; peduncles radical: lips of the corol lanceolate. (The Virginia snake-root.) There is a variety with very long, narrow leaves. Tonic and diaphoretic. B.

Southern.

tomentosa, Sims. (A. g-y.) stem twining: leaves roundish-cordate, downy beneath: corol villous; border 3-cleft, nearly equal.

hastata, N. (A.) stem flexuose, simple, erect: leaves somewhat cordate, hastate, acute: flowers on scapes; lip of the corol ovate.

11—1. ARMENIACA. 36. 92.

Exotic.

vulgaris, (apricot. ♄.) leaves sub-cordate: stipules palmate. Var. *precox*, (early apricot.) fruit small, yellow. Var. *persicoides*, (peach apricot.) fruit sub-compressed.

dasycarpa, (black apricot. ♄.) leaves ovate, acuminate, doubly serrate: petioles glandular: drupe globose, pubescent.

17—2. ARNICA. 49. 55.

nudicaulis. (y. J. 2ℓ.) hairy: radical leaves decussate and opposite, oblong-oval, sub-dentate: stem nearly leafless, divided at the top into several 1-flowered branches. Woods. 18 i.

doronicum, W. (A. y. Ju. 2ℓ.) leaves remote, toothed, woolly-hirsute beneath: radical ones petioled, oblong, narrow at the base: cauline ones alternate, lance-oblong: stems 1-flowered. 7 i.

plantaginea, Ph. (A. y. Ju. 2ℓ.) glabrous: leaves entire, glabrous both sides, acute, 3-nerved; radical ones lance-spatulate, terminating in a narrow petiole at the base; cauline ones opposite, lanceolate, sessile: stem 1-flowered. 7 i.

maritima, W. (W. 2ℓ.) leaves lanceolate; lower ones serrate: stem leafy, many-flowered.

Southern.

fulgens, Ph. (W. y. Ju. 2ℓ.) hairy: radical leaves lanceolate, obtusish, tapering to the base: petioles 3-nerved; cauline leaves opposite, remote, linear: stem 1-flowered. 1 f.

claytoni, Ph. (E. y. Ju. 2ℓ.) hirsute: radical leaves decussately opposite, oblong-ovate, sub-dentate: stem somewhat leafless; top divided into 1-flowered peduncles. 2 f.

11—5. ARONIA. 36. 92.

arbutifolia, (1) (red choak-berry. O. w-r. M. ♄.) leaves lance-obovate, crenate-toothed, downy beneath, with the midrib glandular above: flowers corymbed: calyx downy. Damp.

botryapium, P. (2) (shad-bush, june-berry. O. w. Ap. ♄.) leaves oblong-oval, cuspidate, glabrous when mature, (when first expanded lanceolate and downy:) flowers racemed: petals linear: germs pubescent: segments of the calyx glabrous.

sanguinea, (3) (bloody choak-berry. O. w. M. ♂.) leaves oval, obtuse at both ends, mucronate; serratures very slender: racemes few-flowered: calyx glabrous: petals linear, obtuse.

melanocarpa, (4) (black choak-berry. O. w. M. ♄.) leaves obovate-oblong, acuminate, serrate, glabrous beneath; midrib glandular above: flowers corymbed: calyx glabrous. Damp. 4—6 f.

ovalis, P. (5) (medlar bush. O. w. M. ♄.) leaves round-oval, acute, glabrous: flowers racemed: petals obovate: germ and segments of the calyx pubescent.

Southern.

alnifolia, N. (W. M. ♄.) smooth: leaves roundish, upper part toothed, pinnately nerved, sub-glaucous beneath: raceme simple, elongated. Fruit black and sweet. Pyrus.

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(1) pyrifolia, P. Pyrus arbutifolia, W. Mespilus arbutifolia, L.; and erythrocarpa, Mx. (2) Pyrus botryapium, W. Mespilus canadensis, L. (3) Pyrus sanguinea, Ph. (4) arbutifolia, P. Pyrus melanocarpa, W. Crataegus arbutifolia, Lk. Mespilus arbutifolia, Var. Melanocarpa, Mx. (5) Mespilus canadensis. Var. oboralis, Mx. Crataegus spicata, Lk.

3—2. ARRHENATHERUM. 4. 10.

avenaceum, (J. 2f.) panicle equal, nodding: awn as long again as the flower. culm geniculate, smooth: root nodose. 3 f.

pennsylvanicum. (Ju. 2f.) panicle attenuated: branches short, alternate: awn twice as long as the florets: seeds villous.

Southern.

kentuckenensis, T. (W. 2f.) branches of the panicle fascicled, not alternate: upper floret has the superior valve furnished with a short awn a little below the tip. Avena.

21—2. ARRHENOPTERUM. 56. 4.

heterostichum, erectish: leaves lax-imbricate, oval, with an obtuse point, serrulate, all nerved: peduncle generally terminal: capsule oblong, arcuate: lid conic, obtusely acuminate. Mnium.

17—2. ARTEMISIA. 49. 55.

canadensis, Mx. (wild wormwood. O. w. y. Au. 2f.) sub-decumbent, scarcely pubescent: leaves flat, linear-pinnatifid: branchlets spike-flowered: flowers sub-hemispheric: calyx scarious. Receptacle smooth.

caudata, (L. S. 2f.) stem simple, herbaceous, much branched, pyramidal: radical and cauline leaves bipinnate, pubescent; upper ones pinnate, with sub-setaceous, alternate, divaricate, somewhat convex, segments: flowers pedicelled, erect, globe-ovate. 2 f. *S.*

chinensis, W. (W. S. 2f.) hoary: lower leaves wedge-form, obtuse, 3-lobed: upper ones linear, obtuse: flowers globose, peduncled, nodding.

spithamea, Ph. (E. S. 2f.) small, silky-pubescent: lower leaves linear, upper ones pinnatifid; divisions few, linear, acute: flowers racemed, short-peduncled, hemispheric: calyx scarious.

gnaphaloides, N. (W. S. 2f.) white-downy: stem simple, herbaceous: leaves lance-linear, sub-entire, downy both sides: flowers raceme-glomerate, pedicelled, nodding: calyx oval-oblong: the pistillate florets 6 or 7. 2 f.

vulgaris, W. (mugwort S. 2f.) leaves downy beneath; cauline ones pinnatifid; divisions lanceolate, sub-toothed, acute; floral ones undivided, linear-lanceolate: flowers sub-sessile, oblong, erect: calyx downy.

Exotic.

pontica, (roman artemisia.) leaves downy beneath; cauline ones bipinnate; leafets linear: branches simple: flowers roundish, peduncled, nodding.

absynthium, (wormwood. 2f.) stem branching, panicled: leaves hoary; radical ones triply pinnatifid; divisions lanceolate, toothed, obtuse; cauline ones 2-pinnatifid or pinnatifid; divisions lanceolate, acutish; floral ones undivided, lanceolate. Naturalized in most mountain districts of New-England.

abrotanum, (southern-wood. 2f. & ♄.) stem straight: lower leaves bipinnate; upper ones hair-form, pinnate: calyx pubescent, hemispheric.

Southern.

cana, W. (W. S. 2f.) hoary: leaves long lance-linear, acute, nerved, whitish both sides; lower ones wedge-form, acutely 3-lobed: flowers oval, in glomerules, axillary, sessile.

santonica, W. (W. S. 2f.) cauline leaves glabrous: branches undivided: spikes 1-sided, reflexed: flowers sub-sessile, 5-florets.

campestris, W. (W. S. 2f.) cauline leaves setaceous, pinnate, glabrous; radical ones pinnate, with 3-cleft hoary divisions: stem procumbent, branching, wand-like: flowers ovate, peduncled.

frigida, W. (W. Oc. 2f.) leaves hoary, pinnate; leafets 3-parted, linear, acute; floral ones pinnate, or 3-parted: stem ascending: flowers globose, nodding.

biennis, W. (W. ♂.) leaves glabrous; radical ones 3-parted-pinnate; lower

cauline ones pinnatifid ; upper ones linear, undivided : stem straight : flowers roundish, sub-sessile, erect.

longifolia, N. (W. 2[& ♄.) stem simple: leaves mostly entire, lance-linear, acuminate; margin reflexed ; under side white-downy : flowers cylindric-ovate, erect, in sessile conglomerate racemes.

serrata, N. (W. 2[.) leaves lanceolate, acuminate at both ends ; margin serrate ; upper side smooth, under white-downy : flowers panicled, erect : calyx small, cylindrical-ovate. 5 f.

columbiensis, N. (wild sage. W. 2[. ♄.) canescent : leaves lance-linear, acute, flat, hoary both sides, entire : flowers oblong, glomerate, axillary, sessile, all perfect. 10 f. Highly aromatic.

cernua, N. (1) (W. 2[.) stem much-branched : radical leaves 3-cleft ; lower ones laciniated, hoary pubescent when young ; upper ones entire, lance-linear, smooth : racemes panicled, nodding : flowers pedicelled, sub-globose, inclined : calyx scarious. 8 f.

ludoviciana, N. (W. 2[.) stem simple : lower leaves sub-gash-pinnatifid ; upper ones lanceolate, entire, hairy above, downy beneath : flowers ovate, erect, sessile : calyx pubescent : panicle simple. 2 f. Baccharis.

21—5. ARTHONIA. 57. 2.

punctiformis, crust somewhat determinate, membranaceous, smooth, dark orange-yellow : receptacles minute, roundish, scattered, sub-immersed, flattish one side and sub-convex the other, dark coloured. On the tender bark of branches of trees.

obscura, crust membranaceous, somewhat olive-coloured : receptacles minute, flat, a little concave, sub-membranaceous, oval and reniform, sub-immersed, a little rugose, dark-coloured. On the cuticle and bark of trees.

pruinosa, crust thin, of a tartar-like appearance, unequal, smooth, rimose, white : receptacles flat, immersed, roundish polygons confluent, obscurely dark-yellow, mealy-glaucous. On oak bark, &c.

swartziana, crust white : receptacles broad, confluent. On old trunks of trees. Halsey.

astroidea, crust ash-glaucous : receptacle flat, stellate and formless. On smooth bark. Halsey. Gyalecta.

19—12. ARUM. 2. 7.

dracontium, W. (green-dragon. E & W. J. 2[.) stemless : leaves pedate : leafets lanceolate-oblong, entire : spadix subulate, longer than the oblong-convolute spathe. River alluvion. 12—18 i.

atrorubens, W. (brown-dragon. M. 2[.) stemless : leaves ternate ; leafets ovate, acuminate : spadix cylindrical : spathe sessile, ovate, acuminate, spreading horizontally above. Spathe dark-brown : disagreeable smell.

triphyllum, W. (indian turnip, wild turnip, wake robin. O. p. g. & w. M. 2[.) sub-caulescent : leaves ternate ; leafets ovate, acuminate : spadix club-form : spathe ovate, acuminate, peduncled, with the lamina as long as the spadix. One variety, *virens*, has a green spathe ; another, *atropurpureum*, has a dark-purple spathe ; another, *album*, has a white spathe. 1—3 f.

Southern.

quinatum, N. (E. 2[.) stemless : leaves quinate, lanceolate, acuminate.

walteri, (E. Ap.) stemless : leaves sagittate, triangular : angles divaricate, acute. Lecontia.

3—2. ARUNDO. 4. 10.

canadensis, Mx. (E. Au. 2[.) panicle oblong, loose : glumes scabrous, pubescent, as long as the corol : corol awned on the back : hairs at the base equalling the valves : culm and leaves smooth. 3—4 f.

courctata, T. (Ju. 2[.) panicle somewhat spiked, conglomerate : calyx a little

(1) dracunculoides, L. dracunculus, Ph.

longer than the corol, carinate: corol longer than the hairs, awned a little below the tip. 3—5 f.

brevipilis, T. (S. 2f.) panicle diffuse, capillary: calyx unequal, shorter than the corol, bearded at the base: corol equal, awnless, hairy: hairs very short. 3—4 f.

Southern.

aroides, Mx. (2f.) panicle sub-coarctate, incurved: calyx 2-flowered, glabrous, unequal: corol membranaceous, of the length of the calyx: hairs equalling the corol: leaves flat, scabrous.

19—12. ASARUM. 11. 23.

canadense, (1) (white snakeroot, wild ginger, false colt-foot. O. g-p. M. 2f.) leaves broad kidney-form, in pairs: calyx woolly, deeply 3-parted; divisions sub-lanceolate, reflected. Root aromatic and stimulant. B. *S.*

virginicum, W. (M. 2f.) leaves solitary, round heart-form, glabrous, leathery: flowers sub-sessile: calyx glabrous above, short, bell-form. Leaves speckled, smooth. *S.*

Southern.

arifolium, (E. p. March. 2f.) leaves sub-hastate, cordate: calyx urceolate, border 3-cleft, converging, pubescent within.

13—5. ASCLEPIAS. 30. 47.

1. *Leaves opposite.*

syriaca, (common milkweed. O. w-p. Ju. 2f.) stem very simple: leaves lanceolate-oblong, gradually acute, downy beneath: umbels sub-nodding, downy, 3 to 5 feet high: flowers in large close clusters, sweet-scented—pollinia are fly-traps. 3—5 f. *S.*

obtusifolia, Mx. (2) (p. J. 2f.) leaves clasping, oblong, round-obtuse, sometimes mucronate, waving: umbel terminal, long-peduncled, many-flowered, glabrous; the horn of the nectary exsert. Flowers large. 2—3 f. *S.*

phytolaccoides, Ph. (O. w-g. Ju. 2f.) stem erect, simple: leaves broad-ovate, acute, glabrous, paler beneath: nectaries truncate, internal margin 2-toothed: umbels lateral and terminal, long peduncled, nodding. The horn of the nectary is very long and slender. 3 f. *S.*

periplocæfolia, N. (3) (w-g. Ju. 2f.) leaves sub-sessile, somewhat distant, lance-ovate, narrowing upwards, very acute, smooth on both sides; margin rough: umbels mostly 2, naked, lateral: root round-tuberous: segments of the nectaries oblong-linear. 2 f. *S.*

amœna, W. (p. Ju. 2f.) stem simple, a little hairy on two sides; leaves sub-sessile, oblong-oval, pubescent beneath: terminal umbels and nectaries erect, appendages exsert. Damp. *S.*

purpurascens, W. (p. Ju. 2f.) stem simple: leaves ovate, villose beneath: umbels erect: nectaries resupinate. Shades. 2 f. *S.*

pulchra, W. (E. r. Ju. 2f.) leaves lanceolate, hairy under side: stem divided towards the top: umbels erect, in pairs. Flowers small: bark very showy.

variegata, W. (4) (w. Ju. 2f.) stem simple, erect: leaves ovate, petioled, rugose, naked: umbels sub-sessile, pedicelled, tomentose. The umbels dense. *S.*

incarnata, W. (O. r. Ju. 2f.) stem erect, branching above, downy: leaves lanceolate, sub-downy both sides: umbels mostly double at their origin: the little horn of the nectary exsert. A variety *pulchra*, is more hairy. Var. *glabra*, almost glabrous. Var. *alba*, has white flowers. Damp. 3 f. *S.*

parviflora, (5) (w. Ju. 2f.) smoothish; stem weak, erect, simple: leaves pe-

(1) carolinianum, Wr. latifolium. Sy. (2) purpurescens, Wr. (3) acuminata, Ph. cordata, Wr. laurifolia, Mx. (4) hybrida, Mx. (5) perennis. Wr. debilis, Mx.

tioled, oval-lanceolate, acute at both ends, membranaceous: umbels terminal, lax-flowered; pedicels capillary. The bark is a good substitute for flax. 1—2 f. *S.*

quadrifolia, Ju. (O. w. p-w. M. 2f.) stem erect, simple, glabrous: leaves ovate, acuminate, petioled; those in the middle of the stem are largest, and in fours: umbels 2, terminal, lax-flowered: pedicels filiform. About 18 inches high: flowers small and sweet-scented. *S.*

2. *Leaves not opposite.*

verticillata, Mx. (dwarf milkweed. O. g-y. w. Ju. 2f.) stem erect, very simple, marked with lines, and small pubescence: leaves very narrow-linear, straight, glabrous, whorled, scattered: horn in the nectary exsert. 2 f. *S.*

tuberosa, W. (butterfly-weed. O. y. Ju. 2f.) stem erectish, at the top spreading-branched, very rough-haired: leaves scattered, oblong-lanceolate, rough-haired: umbels terminal, sub-corymbed. A variety, the *decumbens*, has a decumbent stem: leaves sub-linear, hirsute; another Var. *cordata*, has broad cordate leaves. Cathartic, diaphoretic, expectorant. B. 18 i. *S.*

Southern.

connivens, Baldwin. (E. J. 2f.) leaves oblong, oval, mucronate, slightly hairy, sessile; leaves of the nectary usually long, incurved, connivent at the summit. 1—2 f.

tomentosa, E. (E. 2f.) leaves oval, lanceolate, acute, tomentose: umbels sessile, with the horns exserted. 1—2 f.

obovata, E. (E. 2f.) leaves obovate, obtuse, mucronate, tomentose on the under surface: umbels nearly sessile, terminal and axillary. 2—3 f.

amplexicaulis, Mx. (p. w. Ap. 2f.) very glabrous: stems decumbent: leaves sessile, cordate, strongly veined, glaucous, appressed: umbels terminal and axillary. 1—2 f.

paupercula, Mx. (r. g. M. 2f.) leaves linear, lanceolate, very long, remote, glabrous, with the margins pubescent: umbels few-flowered. 3—4 f.

nivea, (O. Ju. 2f.) leaves ovate, lanceolate, nearly glabrous: umbels erect, lateral, solitary: stem simple.

angustifolia, E. (g. w. M. 2f.) leaves scattered, strap-shaped, slightly pubescent: umbels solitary, terminal; horns included. 8—18 i.

cinerea, Wr. (E. J. 2f.) leaves long, linear, opposite: umbels few, terminal, naked: horns short. 3 f.

viridis, Wr. (E. g. p. 2f.) stem erect: leaves petioled, oblong, obtuse, smooth: umbels few, terminal: petals erect, much longer than the calyx: nectaries entire, spreading, short.

speciosa, T. & J. (W.) slenderly tomentose: leaves heart-ovate, obtuse, opposite, short-petioled: umbels axillary, terminal and solitary: nectaries erect, lanceolate, straight, acute; horn short, incurved, compressed. Flower very large.

Acerates.

12—3. ASCYRUM. 20. 63.

crux-andreæ, W. (1) (peter's-wort. y. Ju. ☿.) many stems, diffuse: leaves sub-lanceolate-oblong, obtuse: corymb terminal: flowers sub-sessile, 2-styled: stem sub-terete, 2 feet high: petals narrow. Var? *angustifolia*, W. leaves oblong linear, crowded: flowers lateral and terminal, erect, 2-bracted near the base: styles 1 or 2, connivent: larger calyx leaves acute, oval-ovate. Sand. 3 i. *S.*

hypericoides, W. (2) (y. Ju. ☿.) branching: branches 2-edged: leaves oblong, with 2 glands at the base: flowers terminal, solitary, with short pedicels, 3-styled. *S.*

Southern.

pumilum, Mx. (March. y. 2f.) small, prostrate, much divided: leaves linear-

(1) multicaule, Mx. (2) stans, Mx.

oval, obtuse : peduncles long, reflected : flowers monogynous. Sand. 6—10 i. long. This Elliot supposes the *pauciflorum* of N.

amplexicaule, Mx. (E. Ap. y. 2f.) erect, sparingly branched with the branches compressed : leaves ovate, oblong, clasping ; outer leaves of the calyx cordate : styles 3—4. 1—2 f. Hyperium.

6—1. ASPARAGUS. 11. 12.

Exotic.

officinalis, (asparagus. Ju. 2f.) stem herbaceous, unarmed, sub-erect, terete : leaves bristle-form, soft : stipules sub-solitary. Naturalized in the northern and southern districts. 4 f.

6—1. ASPHODELUS. 10. 16.

Exotic.

luteus, (asphodel, king's spear. 2f.) stem leafy : leaves 3-sided, striate.

ramosus, (2f.) stem branching, naked : leaves ensiform, carinate, smooth.

21—1. ASPIDIUM. 55. 5.

1. *Fronds ternate.*

cicutarium. W. (1) (2f.) leafets pinnatifid ; divisions acuminate, sinuate, pinnatifid, entire ; the lower and outer divisions of the sides elongated : fruit dots in rows.

2. *Frond pinnate.*

acrostichoides, W. (2) O. J. to Au. 2f.) leafets lanceolate, sabre-form, acute, ciliate-serrate ; on the upper side eared and dagger-pointed, on the lower side wedge-form at the base ; the upper fruit-bearing ones smaller : stipe and rachis chaffy : fruit-dots solitary, but at length becoming confluent.

3. *Fronds sub-pinnatifid ; involucre* [indusium] *halved, kidney-form.*

novehoracense, W. (3) (Ju. 2f.) frond pinnate ; leafets linear-lanceolate, pinnatifid, divisions oblong, obtusish, sub-entire, ciliate : fruit dots marginal : stipe smooth. Damp woods.

cristatum, W. (2f.) frond lanceolate-ovate, glabrous, pinnate ; leafets subcordate-oblong, pinnatifid : divisions oblong, obtuse, tooth-serrate : stipe chaffy. A variety, *callipteris*, largish : leafets alternate, divisions oblong, unequally appres-ed-serrate : frond bearing the fruit at the top. Another variety, *lancastriense*, leafets sub-opposite ; divisions triangular, ovate, acute, serrate : stipe naked.

4. *Frond doubly or triply pinnate, involucre halved, kidney-form.*

obtusum, W. (Ju. 2f.) frond doubly-pinnate, the lesser leafets oblong, obtuse, the upper ones having united bases ; tooth-crenate : rachis pubescent above. 4—5 i. Rocks.

aculeatum, W. (A. Au. 2f.) frond doubly-pinnate : the lesser leafets ovate, sub-sabre-form, acute, dagger-serrate, the base of the upper ones truncate, of the lower ones short wedge-form ; the upper ones bear the fruit : stipe and rachis chaffy.

marginale, W. (4) (O. Ju. 2f.) frond doubly-pinnate : lesser leafets oblong, obtuse, decurrent, crenate : more deeply crenate at the base : fruit dots marginal : stipe chaffy. 2—3 f. *S.*

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(1) Polypodium cicutarium, L. appendiculatum, Sw. (2) auriculatum, Sh. Nephrodium acrostichoides, Mx. N. B Linnæus placed the genus Aspidium under the genus Polypodium. (3) Nephrodium thelypteroides. (4) Nephrodium marginale, Mx.

filix-mas, W. (Ju.) frond doubly-pinnate; lesser leafets oblong, obtuse, serrate; serratures beardless: fruit-dots of the middle-rib approximate: stipe and rachis chaffy. 2 or 3 feet high. A variety, *erosum*, lesser leafets erose-serrate, more remote. Rocky hills. *S.*

intermedium, W. (J. 2f.) frond doubly-pinnate; lesser leafets linear, gash-pinnatifid; divisions at the apex sub-mucronate-serrate: stipe chaffy. Resembles the next species in many respects.

spinulosum, W. (Ju. 2f.) frond doubly-pinnate; lesser leafets oblong, decurrent, running together, gash-toothed; divisions mucronate-serrate: stipe chaffy: involucre glandular. Large.

dilatatum, W. (1) (Ju. 2f.) frond doubly-pinnate: lesser leafets oblong, distinct, gash-pinnatifid; divisions mucronate serrate: stipe chaffy: involucre smooth. Leaves more compound, larger and broader than the filix-femina. *S.*

goldianum, T. (Ju.) frond broad-ovate, smooth, bipinnate; divisions lanceolate, pinnatifid; segments oblong, obtuse, with remote uncinated serratures: the lowest decurrent on the rachis: fruit-dot near the central nerve: stem chaffy. 2 f.

5. *Frond doubly or triply pinnate: involucre attached to one side of the fruit-dot.*

These come under the Athyrium of Roth.

thelipteris, (snuff-box fern. Ju. 2f.) frond pinnate: leafets lance-linear, pinnatifid. glabrous; divisions ovate, acute, entire: fruit-dots marginal, contiguous, at length confluent.

bulbiferum, (Ju. 2f.) frond bipinnate, lance-oblong: leafets opposite, oblong, obtuse, serrate; lower ones pinnatifid: rachis bulb-bearing: fruit-dots roundish.

asplenoides, (New-England. Ju. 2f.) frond bipinnate: leafets lance-linear, gash-serrate; serratures 2 or 3-toothed; terminal ones more acute: fruit-dots oblong, lunate. Tall.

filix-femina, (Ju. 2f.) frond bipinnate: leafets lance-oblong, gash-serrate; serratures 2 or 3-toothed, acutish: fruit-dots oblong, straight. Tall.

angustum, (Ju. 2f.) frond bipinnate: leafets lanceolate, gash-serrate, sub-bidentate; lower one elongated above: fruit-dots oblong, sublunate.

punctilobum, (Ju. 2f.) frond bipinnate: leafets decurrent, ovate-oblong, pinnatifid; divisions somewhat 4-toothed: fruit-dots solitary: rachis pubescent: stipe glabrous. 2—3 f. *S.*

atomarium, frond bipinnate: leafets decurrent, ovate-oblong, pinnatifid; divisions toothed: fruit-dots scattered. About a span high.

tenue, (Ju. 2f.) frond bipinnate: leafets ovate, decurrent, toothed: fruit-dots solitary, near the teeth of the leafets. Small. Rocks. *S.*

rufidulum, (J. 2f.) frond bipinnate: leafets chaff-bristly beneath, oblong, obtuse, crenate, coadunate: fruit-dots at length confluent. Small. In tufts on rocks.

Southern.

cicutarium, (E. 2f.) frond ternate; leafets pinnatifid, with acuminate, sinuate-pinnatifid, entire, divisions; the lower and outer divisions of the lateral ones elongated: fruit-dots in a series.

21—1. ASPLENIUM. 55. 5.

rhizophyllum, W. (walking leaf. O. Ju. 2f.) frond lanceolate, stiped, subcrenate, heart-form ears at the base: apex very long, linear-filiform, rooting. Var. *pinnatifidum*, leaves with the crenatures so deep as to become sub-pinnatifid. Barton. Woods.

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(1) Nephrodium cristatum, Mx.

angustifolium, W. (1) (spleenwort. E. Ju. 2f.) frond pinnate: leaves alternate, upper ones sub-alternate, linear-lanceolate, sub-repand; base of the upper ones truncate, of the lower ones slightly rounded. 2—3 f.

ebenum, W. (2) (O. Ju. 2f.) frond pinnate: leafets sessile, lanceolate, serrulate, cordate at the base, auricled above. 6—10 i.

melanocaulon, W. (3) (E. Ju. 2f.) frond pinnate: leafets roundish, obtuse, crenate, at its base wedge-form: stipe particoloured: stem black, polished. 3—5 i.

thelypteroides, W. (4) (O. Ju. 2f.) frond pinnate: leafets sessile, lanceolate, acuminate, deeply pinnatifid; divisions oblong, obtuse, obtusely serrate: fruit-dots parallel, at length confluent. 2 f.

ruta-muraria, W. (O. Ju. 2f.) frond bipinnate at the base, simply pinnate at the apex, obtusely denticulate. Rocks. 1—2 i.

montanum, W. (5) (E. Ju. 2f.) frond glabrous, bipinnate: leafets lanceolate, pinnatifid; divisions 2 or 3-toothed. 2 f.

17—2. ASTER. 49. 55.

1. *Leaves entire.*

hyssopifolius, W. (starflower. w. y. p. Au. to Oc.) leaves linear-lanceolate, 3-nerved, punctate, acute; margin scabrous: branchlets level-top-corymbed, compact: rays about 5-flowered: calyx imbricate, twice as short as the disk. 12 to 24 inches high. *S.*

solidaginoides, W. (6) (O. w. Au. 2f.) leaves linear-lanceolate, obsolete-3-nerved, entire, obtuse; margin scabrous: branches level-top-corymbed: flowers sessile, aggregate: rays 5-flowered: calyx shorter than the disk, imbricate; scales oblong, obtuse, close-pressed, sub-reflexed at the apex. About 2 feet high: scales of the calyx white, with green tips: rays long and white. *S.*

ledifolius, Ph. (7) (O. y. w. S. and Oc. 2f.) leaves linear-lanceolate, tapering to the base, without nerves, roughish, revolute margin: branches corymbed; branchlets filiform, 1-flowered, nakedish: calyx lax, imbricate, twice as short as the disk: leafets very acute: rays about 20-flowered. A variety, *uniflorus*, (8) has a very simple stem, bearing but one flower. About a foot high; sometimes the leaves have a small indenture on each side.

rigidus, W. (9) (p. y. Au. 2f.) leaves linear, mucronate, sub-carinate, rigid; margin rough-ciliate: the cauline leaves reflexed; the branch ones spreading, subulate: stem erect, somewhat branched above; branchlets 1-flowered, corymbed: calyx imbricate, twice as short as the disk: scales obtusish, carinate: rays about 10-flowered, reflexed. Hardly a foot high. *S.*

linariifolius, W. (10) (O. p. y. Au. 2f.) leaves thick-set, nerveless, linear, mucronate, dotted, carinate, rough, stiff, those on the branches recurved: stem sub-decumbent: branches level-topped, 1-flowered: calyx imbricate, of the length of the disk. A little lower than the preceding species, and flowers smaller: stem rough, purplish. *S.*

graminifolius, Ph. (p. Au. 2f.) leaves narrow-linear, nerveless, punctate, glabrous, erect: terminal branchlets nakedish, 1-flowered: calyx lax, nearly equalling the disk. 6 i.

linifolius, W. (S. 2f.) leaves linear, without nerves, dotted, rough, reflexed-spreading: branches level-top-corymbed, leafy: calyx imbricate, short: rays about equal to the disk. About 18 or 24 inches high.

subulatus, Mx. (L. Au. 2f.) very glabrous, small-flowered: stem panicled: branches many-flowered: leaves linear-subulate: calyx cylindric; ligulate florets of the ray minute. Salt marshes. *S.*

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(1) pycnocarpon, Sl. (2) trichomanoides, Mx. (3) trichomanes, Mx. (4) acrostichoides, Sw. (5) Adiantum nigrum, Mx. (6) Conyza linifolia, L. (7) nemoralis, A. (8) uniflorus, Mx. (9) linariifolius, in Banks' collection. (10) Inula linariifolia, N.

foliolosus, A. (1) (Au. 2f.) leaves linear-lanceolate, tapering to both ends, acuminate: stem pubescent, panicled, erect: branches few-flowered: calyx imbricate: scales linear, acute, close-pressed. Flowers small; hardly distinct from the next species. *S.*

tenuifolius, W. (w. Au. 2f.) leaves linear-lanceolate, tapering to both ends; hispid margin: stem glabrous, branching, erect; branchlets 1-flowered: calyx imbricate: scales oblong, acute, lax. *S.*

dumosus, W. (O. w. y. Au. 2f.) leaves linear, glabrous; those of the branchlets are the shortest: branches panicled: calyx cylindric, closely imbricate. A variety, called *violaceus*, has pale violet rays, and a pubescent stem. Another variety, *albus*, has white rays, and a glabrous stem. Flowers small. *S.*

ericoides, W. (O. w-y. Au. 2f.) leaves linear, very glabrous; those of the branchlets subulate, approximate; cauline ones elongated: calyx somewhat scurfy: leaves acute: stem glabrous. Flowers small. *S.*

multiflorus, W. (O. w-y. Au. to Nov. 2f.) leaves linear, smoothish: stem very branching, diffuse, pubescent; branchlets one-way: calyx imbricate: scales oblong, scurfy, acute. Probably a variety of the last. *S.*

ciliatus, W. (2f.) leaves ciliate; cauline ones lance-linear, nerved; branching ones very short, lanceolate, 3-nerved: stem branching, pubescent; branches panicled: calyx imbricate, with spatulate, squarrose scales. Perhaps a variety of the *multiflorus*.

paludosus, W. (E. b. y. Au. Nov. 2f.) leaves sessile, subulate, glabrous, with the margin scabrous: peduncles few, 1-flowered: involucre squarrose, the lower scales leaf-like. 12—18 i. *S.*

flexuosus, N. (2) (L. O. y. w-p. Au. 2f.) very glabrous: leaves subulate-linear, somewhat fleshy, sub-reflexed: stem slender, very branching; branches and branchlets spreading, bristle-form, 1-flowered: scales of the peduncles divaricate, subulate: calyx imbricate, scales close-pressed, acute. Resembles the last: flowers smaller. Salt marshes. *S.*

concolor, W. (r-b. Au. 2f.) leaves oblong-lanceolate, white-pubescent both sides: stem very simple, erect, pubescent: raceme terminal: calyx imbricate, scales lanceolate, silky, close-pressed. About a foot high: ray and disk coloured alike. *S.*

cornifolius, M. & W. (O. w. Au. 2f.) glabrous: leaves oblong-ovate, acuminate, short-petioled; margin rough: stem glabrous: panicle few-flowered; branches 2-flowered; calyx sub-imbricate.

humilis, W. (3) (w. Au. 2f.) leaves sub-rhomboid, oval-lanceolate, acuminate at both ends, sub-petioled, glabrous; margin hispid: corymb divergingly dichotomous, nakedish, few-flowered: calyx lax-imbricate: rays 8-flowered. About a foot high; flowers large. *S.*

amygdalinus, Mx. (4) (O. w. S. 2f.) leaves lanceolate, tapering to the base, acuminate; margin rough: stem simple, level-top-corymbed at the top: calyx lax-imbricate: scales lanceolate, obtuse. Rays large. *S.*

salicifolius, A. & W. (5) (r-b. Au. 2f.) leaves linear-lanceolate, sub-entire, glabrous: stem glabrous, panicled at the top: calyx lax-imbricate: scales acute, spreading at their tips. 4—6 f. Flower middle-sized.

aestivus, W. (b. Ju. to S. 2f.) leaves lanceolate, sub-clasping, tapering to the apex: margin rough: stem branching from its base, erect, hispid; branchlets pilose: calyx scaly: scales lax, linear, acute, equal. About 2 feet high: the flowers resembling the last.

nova-angliae, (O. b-p. Au. 2f.) leaves linear-lanceolate, pilose, clasping, auricled at the base: stem sub-simple, pilose, straight and stiff: flowers subsessile, terminal, crowded: scales of the calyx lax, coloured, lanceolate, longer than the disk. In rich soil it grows 10 feet high: flowers large. *S.*

cyaneus, Hn. (6) (O. b-p. Au. 2f.) leaves linear-lanceolate, clasping, smooth:

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(1) cordifolius, Mx. (2) sparsiflorus, Ph. (3) infirmus, Mx. divaricatus, W. cornifolius, L. probably a variety of cornifolius. (4) umbellatus, A. Inula amygdalina, N. (5) praealtus, Lb. (6) rubricaulis, Lb. spurius, W. novae-angliae, A.

stem wand-like-panicled, very glabrous: branches racemed: scales of the calyx lax, lanceolate, equalling the disk, inner ones coloured at the apex. 3—4 f. Flowers many and large. This is the handsomest of all asters. *S.*

phlogifolius, W. (1) (w. p. Au. 2f.) leaves lanceolate, heart-form, clasping, pubescent beneath, rough margin: stem very simple, pubescent: panicle terminal, lax, few-flowered: scales of the calyx lax, imbricate, lanceolate. From 18 to 24 inches high.

2. *Leaves more or less cordate and ovate, serrate or toothed.*

undulatus, (2) (S. 2f.) stem leaves heart-oblong, clasping, undulate, scabrous, toothed near the summit: branches of the panicle expanding, few-flowered: calyx sub-squarrose. Flowers large. 3 f. *S.*

sagittifolius, Wedem. (b. 2f.) leaves lance-oblong, acuminate, sessile, serrate in the middle; radical ones oblong, heart-saggittate, serrate, petioled: stem glabrous, branching; scales of the calyx lax, imbricate, lanceolate. *S.*

diversifolius, Mx. (3) (E. y. p. S. 2f.) leaves nearly entire, undulate, pubescent, sub-scabrous; lower ones cordate, ovate, with winged petioles; upper ones lance-oblong: panicle loose, the branches slender, racemose. 3 f. *S.*

paniculatus, A. (O. b-p. Au. to Nov. 2f.) leaves ovate-lanceolate, sub-serrate, petioled, glabrous; radical ones ovate-heart-form, serrate, rough, petioled; petioles naked: stem very branching, glabrous; branchlets pilose: calyx lax, sub-imbricate. 2—4 f. Flowers smallish, numerous. *S.*

cordifolius, L. (O. w. S. 2f.) leaves heart-form, pilose beneath, sharp-serrate, petioled; petioles winged: stem panicled, smoothish: panicles divaricate: calyx lax, sub-imbricate. Flowers small.

corymbosus, A. (O. w. Au. 2f.) leaves ovate, sharp-serrate, acuminate, smoothish; lower ones heart-form, petioled; petioles naked: stem glabrous, level-top-corymbed above: branches pilose: calyx oblong, imbricate: scales obtuse, very close-pressed. 12—14 i. Flowers rather large.

macrophyllus, A. (O. w-b. Au. 2f.) leaves ovate, petioled, serrate, rough; upper ones ovate-heart-form, sessile; lower ones heart-form, petioled; petioles sub-margined: stem branching, diffused: calyx cylindric, closely imbricate: scales oblong, acute. 1—2 f. Flowers largish. *S.*

3. *Leaves lanceolate and ovate, lower ones serrate.*

amplexicaulis, W. (4) (O. b. S. 2f.) leaves ovate-oblong, acute, clasping, heart-form, serrate, glabrous: stem panicled, glabrous; branchlets 1-2-flowered: scales of the calyx lanceolate, closely imbricate. Flowers middle-sized.

prenanthoides, W. (b. 2f.) leaves clasping, spatulate-lanceolate, acuminate, serrate in the middle, heart-form at the base: branchlets pilose: scales of the calyx lanceolate, scurfy.

laevigatus, W. (O. r-p. S. to Nov. 2f.) leaves sub-clasping, broad-lanceolate, sub-serrate, smooth: stem very branching, glabrous; branchlets many-flowered: scales of the calyx lanceolate, lax, nearly equalling the disk. *S.*

versicolor, W. (y-w. Au. 2f.) leaves sub-clasping, broad-lanceolate, sub-serrate, glabrous; radical ones serrate in the middle: stem very branching, glabrous: scales of the calyx lanceolate, lax, shorter than the disk. Flowers many and large, elegant. *S.*

mutabilis, W. (p-y. Au. to Oc. 2f.) leaves sub-clasping: upper ones lanceolate, acuminate, entire; lower ones lanceolate, at the base narrow, serrate; branchlets wand-like: calyx shorter than the disk, lax: stem glabrous.

laevis, W. (b-p. S. to Nov. 2f.) leaves sub-clasping, remote, oblong, entire, shining; radical ones sub-serrate: branches simple, 1-flowered: calyx im-

(1) amplexicaulis, Mx. (2) diversifolius, Mx. patens, W. (3) undulatus, W. tardifolius, Wr. (4) pensylvanicus, Lb.

bricate, the leafets somewhat wedge-form, acute, thickened at the apex: stem glabrous, angular.

concinnus, W. (b-p. S. to Nov. 2f.) leaves lanceolate, somewhat clasping; lower ones sub-serrate, glabrous: stem simple, panicled at the top: calyx closely imbricate.

puniceus, (O. p. Au. to Nov. 2f.) leaves clasping, lanceolate, serrate, roughish: branches panicled: calyx lax, exceeding the disk, the leafets linear-lanceolate, sub-equal: stem hispid. A variety, *purpureus*, (1) seven feet: stem deep purple. Another variety, *refescens*, (2) tall; from green becoming reddish. From 3 to 10 feet high: flowers large. Damp. *S.*

floribundus, W. (E. 2f.) leaves somewhat clasping, lanceolate; lower ones serrate: stem glabrous: branches corymbed; branchlets many-flowered, hairy: scales of the calyx lax, lanceolate, imbricate.

novi-belgii, (w-p. Au. 2f.) leaves sub-clasping, lanceolate, glabrous, rough at the margin; lower ones sub-serrate: branches sub-divided: calyx lax-imbricate, the leafets linear-lanceolate: stem terete, glabrous.

bellidiflorus, W. (r. y. 2f.) leaves clasping, narrow-lanceolate, scabrous above, sub-serrate beneath: stem very branching: scales of the calyx lanceolate, spreading.

spectabilis, W. (b. Au. 2f.) leaves lanceolate, roughish, sub-clasping; lower ones serrate in the middle: branches corymbed: leafets of the calyx lax, foliaceous, somewhat wedge-form, acutish, scurfy. About 2 feet high: flowers large.

serotinus, W. (b. S. 2f.) leaves oblong-lanceolate, acuminate, sessile, glabrous; margin rough; lower ones serrate: branches corymbed, glabrous; branchlets 1-flowered: scales of the calyx lanceolate, acuminate, spreading. About three feet: flowers large.

tardiflorus, W. (b. Oc. 2f.) leaves sessile, serrate, glabrous, spatulate-lanceolate, tapering to the base, deflected at the margin and both sides: branches divaricate: calyx lax, the leafets lanceolate-linear, sub-equal, glabrous. Flowers not middle size.

blandus, Ph. (p. Oc. 2f.) leaves somewhat clasping, oblong-lanceolate, acuminate, serrate, glabrous: stem branching in a pyramid-form; branches axillary, racemed, scarcely longer than the leaf: peduncles downy, not winged: calyx lax, sub-equal, shorter than the disk. Flowers largish.

acuminatus, Mx. (w. Au. 2f.) leaves broad-lanceolate; lower ones tapering, entire, upper ones unequally serrate, long-acuminate: stem simple, zigzag, angular: panicle corymbed, divaricate-dichotomous: leafets of the calyx lax, linear, shorter than the disk. A variety called *elatior*, has a taller stem: panicles many-flowered and leafy. Another variety, *pumilus*, has a lower stem: corymb few-flowered, naked, scarcely higher than the leaves. Commonly 12 inches high and upwards; flowers middle-size. Probably a variety of prenanthoides. *S.*

conyzoides, W. (3) (O. w. Ju. 2f.) leaves oblong, 3-nerved, narrow and acute at the base; upper ones sessile, sub-entire; lower ones petioled, serrate: stem simple, corymbed at the top: calyx cylindric, scurfy: rays 5, very short. About 12 inches high: flowers small.

nudiflorus, N. (E. r. 2f.) stems simple, smooth: leaves sessile, lance-ovate, sub-acuminate, sharply-serrate; upper side scabrous: corymb simple, few-flowered: peduncles hairy or naked, 1-flowered: calyx imbricate: scales ciliate.

radula, W. (w. S. 2f.) leaves lanceolate, serrate, acuminate, rugose, very rough: stem erect, angular, simple: corymb terminal: calyx imbricate: leafets lanceolate, obtusish, somewhat scurfy. Flowers mid-size.

strictus, Ph. (4) (y-r. S. 2f.) leaves sessile, narrow-lanceolate, serrate, rough

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(1) amoenus, Lb. (2) hispidus, Lb. (3) marylandicus, Mx. Conyza asteroides, L. (4) biflorus, Mx.

stem 1 or few-flowered above: scales of the calyx imbricate, close-pressed, oblong, acute, nearly equalling the disk. Four to seven inches high: flowers middle-sized.

tradescanti, W. (1) (O. w-p. Au. 2f.) leaves lanceolate, serrate, sessile, glabrous: branches wand-like: calyx imbricate: stem terete, glabrous. 3 to 4 feet high: flowers small.

recurvatus, W. (2) (O. b. S. 2f.) leaves sessile, narrow-lanceolate, tapering to the base; lower ones serrate in the middle: stem branching, glabrous, recurvate: scales of the calyx lax, imbricate, linear-lanceolate, sub-equal. Resembles the last.

laxus, W. (w-y. S. to Nov. 2f.) leaves linear-lanceolate, acuminate; rough margin; lower ones sub-serrate: stem sub-reflexed: branches very spreading: stem lax, panicled at the apex: calyx imbricate: leafets lanceolate, acute, reflexed at the apex.

junceus, A. (r. Au. 2f.) leaves lanceolate-linear, sessile, glabrous; lower ones sub-serrate; those of the branchlets lanceolate: stem panicled, glabrous: branches wand-like: calyx imbricate. 2—6 f. *S.*

dracunculoides, W. (3) (w. S. 2f.) leaves linear, acuminate, entire; lower ones linear-lanceolate, sub-serrate: branches corymbed: calyx imbricate: stem smoothish. About 3 or 4 feet high. *S.*

miser, W. (w. S. 2f.) leaves sessile, lanceolate, serrate, glabrous: calyx imbricate: leafets acute: florets of the disk and ray equal: stem sub-villose.

divergens, A. (O. w-r. S. 2f.) leaves elliptic-lanceolate, serrate, glabrous: cauline ones linear-lanceolate, elongated: branches spreading: calyx imbricate: stem pubescent. 3 to 5 feet high: flowers small. *S.*

diffusus, A. (w. S. to Nov. 2f.) leaves elliptic-lanceolate, serrate, glabrous, all proportioned: branches spreading: calyx imbricate: stem pubescent. Flowers small. *S.*

pendulus, W. (O. w. Oc. to Nov. 2f.) leaves elliptic-lanceolate, serrate, glabrous; those of the branchlets remotish: branches very divaricate, pendulous: stem pubescent. Resembles the preceding; but the disk turns brown.

eminens, W. (y. r. S. 2f.) leaves lance-linear, acuminate, scabrous at the margin; lower ones sub-serrate: stem panicled: branchlets 1-flowered: calyx lax-imbricate, with lanceolate leafets.

simplex, W. (w. y. 2f.) leaves lanceolate, acuminate, scabrous at the margin; cauline ones serrate at the apex; those of the branches entire: stem glabrous, panicled at the apex: calyx lax-imbricate, with linear-subulate leafets.

polyphyllus, W. (w. y. r. 2f.) leaves linear, mostly entire; radical ones oblong, sub-serrate: stem very branching, hairy: calyx lax-imbricate.

lanceolatus, W. (w. p. Au. 2f.) leaves lance-linear, sessile, mostly entire, glabrous; lower ones lanceolate, sub-serrate: stem branching, diffuse, very glabrous: calyx imbricate, with lanceolate somewhat spreading leafets.

fragilis, W. (w. 2f.) leaves linear, acuminate, entire; radical ones oblong, serrate: branches corymb-panicled: calyx imbricate, with close-pressed scales: stem very glabrous. 2 f.

Exotic.

chinensis, (china aster. ☼.) leaves ovate, thickly toothed, petioled: cauline ones sessile, at the base wedge-form; floral ones lanceolate, entire: stem hispid: branches 1-flowered: calyx foliaceous. A variety has very full flowers, various-coloured, and very short rays. Cultivated.

Southern.

tortifolius, Mx. (E. Au. 2f.) leaves cuneate, obovate, acute, entire, pubescent, twisted, expanding: flowers nearly sessile, aggregate: scales of the calyx linear-lanceolate, close-pressed. 2 f.

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(1) virgineus, Lb. (2) salicifolius, Lb. (3) artemisiflorus, Lb.

grandiflorus, W. (E. p. y. Oc. 2f.) leaves sub-clasping, linear, subulate, rigid reflexed, with the margin ciliate and hispid: stem hairy: branches 1-flowered: calyx squarrose; the scales linear-lanceolate. 2—3 f.

exilis, E. (E. p. y. S. 2f.) very glabrous: stem slender, tall, somewhat branched: leaves very long, linear, subulate: head in racemes: scales of the calyx lance-linear, half as long as the ray. 4—5 f.

racemosus, E. (E. p. y. S. 2f.) leaves lance-linear, sub-pubescent beneath; margin scabrous; branches slender, long: heads nearly sessile, crowded towards the summit of the branches. 2 f.

squarrosus, W. (E. b. y. S. 2f.) leaves very numerous, sessile, ovate, acute, reflexed, rigid: margin hispid: stem branching, hairy: branches one-flowered: scales of the involucre lanceolate, hairy, loose. 2 f.

reticulatus, Ph. (E. w. Au. 2f.) leaves sessile, oblong, lanceolate, acute at both ends, hoary and tomentose, 3-nerved, reticulately veined beneath: flowers racemed: scales of the calyx very acute. 3 f.

virgatus, E. (E. b-p. S. 2f.) leaves lance-linear, clasping, very glabrous: stem sub-branched: branches virgate, erect: heads racemose: scales of the calyx very acute, slightly squarrose. 3—4 f.

carolinianus, Wr. (E. p. Oc. 2f.) stem shrubby, flexuous, much branched, pubescent: leaves sessile, oblong-lanceolate, tapering to each end: scales of the calyx lance-linear, very pubescent, sub-squarrose. 10—12 f.

surculosus, Mx. (E. p. y. Oc. 2f.) stem simple, pubescent towards the summit: leaves ob-lanceolate, acute, sub-serrate, scabrous above, upper ones small: flowers few, large: scales of the calyx oblong, ovate, reflexed, very pubescent. 12—18 i.

discoideus, E. (E. p. S. 2f.) stem erect, sub-villous: leaves spatulate-ovate, acute, serrate, hairy, pale beneath: scales of the calyx subulate, villous, loose, sub-squarrose: florets of the ray none. 2—3 f.

scaber, E. (E. p. y. S. 2f.) lower leaves petioled, oblong, cordate, acute, entire; upper ones sessile, clasping, lance-ovate, tapering to an acute point; all of the leaves scabrous, undulate: panicle loose, long; the branches racemose. 3 f.

dichotomus, E. (E. w. p. y. Oc. 2f.) leaves sessile, oval, obtuse, pubescent: corymb sub-dichotomous: branches naked, long. 2 f.

obovatus, N. (E. w. y. M. 2f.) leaves sessile, oval or obovate, obtuse, sub-rugose, very pubescent: corymb paniculate: scales of the calyx closely imbricate. 3 f.

canescens, Ph. (1) (W. p. Au. 2f.) white-pubescent: leaves linear: panicle corymbed, very branching, leafy: calyx imbricate, very acute, longer than the disk.

pauciflorus, N. (W. w. Au. 2f.) stem simple, 3 to 6-flowered: leaves linear, smooth, those of the stem subulate, and somewhat clasping: peduncles axillary and terminal, about 1-flowered: calyx and peduncle viscidly pubescent. On the margin of salt springs. 10 i.

montanus, N. (A. p-b.) leaves lance-linear, sessile, entire, silk-villous, obsoletely 3-nerved: stem erect, slender: branches 1-flowered: calyx hemispherical, with lance-linear, acute, erect leafets.

oblongifolius, N. (W. p. 2f.) stem and leaves finely scabrous: leaves mostly lance-oblong, somewhat clasping, not hairy: stem with sub-fastigiate few-flowered branches: calyx hemispherical, with squarrose, acute, oblong-linear leafets. 1 f.

sparsiflorus, Mx. (E.) sub-glabrous: leaves linear, entire, reflexed: stem slender, much branched: branches expanding, setaceous, 1-flowered: scales of the involucre close-pressed.

heterophyllus, W. (W. 2f.) leaves glabrous; cauline ones ovate, sub-cordate, acuminate, deeply serrate, entire at the apex; those of the branches oblong-ovate, sub-serrate; those of the branchlets lanceolate, minutely reflex-spreading: stem panicled, glabrous: calyx closely imbricate.

(1) biennis, N.

adulterinus, W. (W. y. p. 2f.) leaves clasping, lanceolate; lower ones subserrate, glabrous; those of the branches linear, squarrose: calyx squarrose, shorter than the disk: scales wedge-linear.

peregrinus, Ph. (W. p-b. 2f.) leaves sessile, remote, lance-oblong, gradually acute, glabrous: stem erect, sub-simple, glabrous, hirsute towards the top, and 1 to 3-flowered at the summit: scales of the calyx lance-linear, villous, very acute, lax, of the length of the disk: rays numerous.

gracilis, N. (W. b. 2f.) leaves lance-oblong, remotely gash-serrate, acute, somewhat clasping, nearly smooth, with scabrous margin: stem minutely hairy, corymbed at the top: peduncles filiform, 2 and 3-flowered; lateral pedicels longer: calyx cylindric, squarrose-imbricated, with linear-oblong, sub-acute scales. Rays about 12, longer than the calyx. 1 f.

albus, N. (1) (W. w. Au. 2f.) simple: flowers fastigiate-corymbed; peduncles (flower bearing branches) nearly naked, one-flowered: leaves lance-oblong, entire, scabrous, attenuated below. 1 f.

16—10. ASTRAGALUS. 32. 93.

secundus, Mx. (A. p. Ju. 2f.) caulescent, procumbent: leafets ovate, pubescent: spikes peduncled: legumes one-way, straight, acuminate both ends, pendulous.

canadensis, W. (O. y. Ju. 2f.) caulescent, diffuse: leafets (21) glabrous both sides: legume sub-cylindric, mucronate. On the islands near Troy. 30 i. *S.*

carolinianus, W. (A. y. J. 2f.) caulescent, erect: leafets (41) oblong, pubescent beneath: spikes peduncled: bracts lanceolate, of the length of the peduncle: legumes ovate, tumid, beaked. *S.*

alpinus, Ph. (A. p. Ju. 2f.) caulescent, procumbent: flowers pendulous, racemed: legumes acute at both ends, hairy.

Exotic.

glaux, (milk vetch. ☼.) caulescent, diffuse; the little heads peduncled, imbricate, ovate: flowers erect: legume ovate, callous, inflated.

depressus, (trailing vetch. 2f.) sub-caulescent, procumbent: leafets obovate: raceme shorter than the petiole: legume terete, lanceolate, reflexed.

Southern.

glaber, Mx. (E. w. Ap.) caulescent, glabrous: leafets numerous, small, oval, slightly fringed: spikes 3 to 6-flowered, on long peduncles: pods distant, terete, incurved. 2 f.

obcordatus, E. (L. w.) glabrous: leafets small, 15 to 19 in number, obcordate: peduncles long, bearing 8 to 12 flowers at the top. Stem decumbent?

carnosus, N. (W. b-p.) stem caulescent, decumbent, hairy: leafets 8 to 10 pair, lance-oblong: stipules ovate: racemes axillary, about the length of the leaves: legumes large, pendulous, oval, fleshy, inflated and compressed, smooth.

galegoides, N. (W. w.) stem sub-erect: leafets about 21, lance-oblong, sub-pubescent beneath: peduncles axillary, longer than the leaves: spike crowded: flowers pedicelled, one-sided: legumes stiped, pendulous, 3-sided, inflated, smooth: calyx hairy, with subulate segments: strong-scented. The *racemosus*, Ph. 2 f.

triphyllus, Ph. (W. 2f.) stemless: assurgent: leaves ternate: leafets lanceolate, sessile: scape none: legumes sessile, oblong. Leaves of silvery hue.

hypoglottis, (W. M.) stem procumbent: leafets oblong: spikes ovate, peduncled, longer than the leaves: legumes erect, ovate, channelled. Perhaps a northern plant.

laxmani, (W. 2f.) stem diffuse and ascending, grooved: cauline bracts membranaceous, acuminate: leafets sub-pubescent, oblong, 6 to 8 pair: peduncles axillary and terminal, much longer than the leaves, thick, grooved, in

(1) Inula, N.

sub-oval crowded spikes : bracts acuminate : legumes oblong, pubescent when young.

gracilis, N. (W. M. 2f.) pubescent : stem slender, erect : leaves sub-sessile ; leafets oblong-linear, 13 to 21, remote : racemes peduncled, longer than the leaves : legume very short, nodding, oval-ovate, somewhat 3-sided, hairy, 1-celled : teeth of the calyx minute. 2 f. Nuttall says, it is the *tenellus* of Pursh, which is called Ervum multiflorum by the same author in one place, and Dalea parviflora in another.

mollissimus, T. & J. (W. y-w. 2f.) almost stemless, erect, silk-downy ; stipules not attached to the petioles, opposite to the leaves : leafets 11 to 14 pairs, ovate-oblong, mucronate : peduncles larger than the leaves : flowers in spikes, erect : legumes oblong, curved, glabrous.

micranthus, N. (W. b. M. ☼. 2f.) decumbent : leafets oval, emarginate, glabrous : peduncles about 2-flowered, longer than the petioles : legumes falcate, 2-keeled, glabrous : seeds truncate. 7 i. Galega.

3—2. ATHEROPOGON. 4. 10.

apludoides, M. (1) (hair-beard. S. 2f.) spikes short, numerous, (20 to 40,) reflexed downwards : culm terete, glabrous, geniculate : leaves hairy at the base : sheaths hairy. 1 f. *S.*

oligostachyum, N. (W. 2f.) spikes 2 or 3, sub-terminal, many-flowered : calyx and corol pilose ; outer valve of the corol 3-awned, the 2 lateral awns shorter and arising near the middle of the valve—neutral valve 3-awned. 10 i. *S.* Sesleria.

Athyrium, ASPIDIUM.

12—13. ATRAGENE. 26. 61.

americana, Sims. (2) (false virgin-bower. O. b-p. M. 2f.) stem climbing, 6-angled : leaves in fours, ternate, with climbing petioles : leafets glabrous, heart-ovate, acuminate : seeds caudate, with hairs not plumose. Thalictrum.

5—2. ATRIPLEX. 12. 29.

halimus, W. (orach. ♄.) leaves alternate or opposite, oblong-sub-rhomboid, entire.

hortensis, (garden orach. Ju. ☼.) stem erect, herbaceous : leaves triangular, toothed, of an uniform colour : calyx of the fruit ovate, netted, entire. 3 f.

laciniata, W. (L. J. ☼.) stem erect, herbaceous : leaves triangular, deeply-toothed, white beneath : calyx of the fruit rhomboid, 3-nerved, denticulate. *S.*

arenaria, N. (3) (Ju. ☼.) stem herbaceous, spreading : leaves entire, oblong-ovate, sub-sessile, white-silvery beneath ; upper ones acute or acuminate : flowers axillary, glomerate : calyx of the fertile flowers muricate, dentate, retuse. Stem reddish, angular, very branching ; about a foot high. *S.*

patula, (E. Ap. ☼.) stem herbaceous, spreading : leaves triangular-hastate, smooth above, irregularly toothed ; upper ones entire : fruit-bearing calyx sub-muricate on the sides. Perhaps a variety of *lacincata*, T. *S.*

hastata, W. (E. Ju. ☼.) stem erect, herbaceous : leaves triangular-hastate, deeply toothed, uniform coloured : calyx of the fruit sinuate-toothed ; middle tooth elongated. Perhaps introduced.

Southern.

angustifolia, (L. J. ☼.) stem herbaceous, divaricate ; lower leaves hastate, slightly toothed ; upper ones lanceolate, entire : calyx of the fruit lance-hastate, entire.

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(1) Chloris curtipendula, Mx. (2) pensylvanica, M. Clematis, verticillata, Dc. (3) patula ? M.

canescens, N. (W. M.) dioecious, dusty-whitish : stem shrubby, diffuse : leaves oblong-linear, entire, obtuse, tapering towards the base ; young leaves acute. 3 f. Calligonum canescens of Pursh.

argentea, N. (W. ☼.) stem herbaceous, erect : leaves deltoid, sub-cordate, sub-obtuse, entire, white-dusty and shining both sides : fruit somewhat peduncled, oval, compressed, obtuse, acutely toothed at the margin. 1 f. Chenopodium.

5—1. ATROPA. 28. 41.

physaloides, W. (1) (w-b. Ju. ☼) stem very branching : calyx membranaceous, 5-angled, net-veined : berry fleshy, covered with the calyx : leaves sinuate-angled. *S.*

Exotic.

belladonna, (deadly nightshade. w-y. 2f.) stem herbaceous, brachiate : leaves ovate, entire. Berries black and poisonous. Capsicum.

3—2. AULAXANTHUS. 4. 10.

Southern.

ciliatus, E. (E. S. 2f ?) stem erect : leaves linear, ciliate : panicle slender, compact. Sand. 2 f.

rufus, E. (E. Au.) stem erect : leaves very glabrous : panicle large, slightly compressed : hairs on the calyx reddish-yellow. Perhaps a variety of ciliatus, E. Phalaris.

Aulaxia, AULAXANTHUS.

3—2. AVENA. (2) 4. 10.

praecox, (dwarf oats. J. ☼.) panicle in a dense raceme : florets as long as the calyx : awn exsert : leaves setaceous. Sand. 4 i.

mollis, Ph. (E.) racemes somewhat in a compact spike : calyx 2-flowered ; flowers, awned and beardless—awns straight, of the length of the flower : leaves and culm with soft pubescence.

striata, Ph. (A) panicle compact, few-flowered : calyx 5-flowered : flowers longer than the calyx, almost beardless : valves outerly striate, with a long awn upon the back : seed naked.

Exotic.

sativa, (oats. J. ☼.) panicled : calyx 2-seeded : seeds smooth, one of them awned. First discovered in the island of Juan Fernandez. A variety is awnless, and has black seeds.

sterilis, (animated oats. Ju. ☼.) panicled : calyx about 5-flowered : florets hairy, the middle ones awnless. When dry, the heads are set in motion, if moistened, by the untwisting of the awns.

elatior, (J. 2f.) panicle sub-contracted, nodding : glume 2-flowered : florets perfect, sub-awnless, staminate awned : culm geniculate, glabrous : root creeping. Introduced. Aira.

5—1. AZALEA. 18. 50.

procumbens, W. (Whitehills. r. Ju. ♄.) leafy-flowered : branches diffuse, procumbent : leaves opposite, elliptic, glabrous : margin revolute : corol bell-form, glabrous : filaments enclosed, equal. Flowers small ; resembles Ledum buxifolium : all the other species resemble the Rhododendron, to which Don annexed them.

calendulacea, Mx. (r. & y. Ap. ♄.) sub-naked-flowered : leaves oblong, pubescent both sides, and when full-grown become rough-haired : flowers abun-

(1) Nicandra physaloides, P. (2) See Danthonia.

dant, large, not viscous: teeth of the calyx oblong: corol with a hirsute tube shorter than its divisions. A variety, *flammea*, has a flame-coloured flower; another, *crocea*, has a saffron-coloured flower. 4 f.

canescens, (Catskill mountains. r. J. ♄.) sub-naked-flowered: leaves obovate-oblong, pubescent on the upper side, and downy beneath; nerves not bristle-bearing: flowers not viscous: tube of the corol scarcely shorter than its divisions: teeth of the calyx very short, round-obtuse: stamens scarcely exsert. *S.*

arborescens, (r. ♄.) flowers leafy: leaves obovate, sub-obtuse, smooth both sides, glaucous beneath, ciliate on the margin; nerve almost smooth: flowers not viscous; tubes longer than the segments: calyx leafy, with oblong acute segments: filaments exsert. 15 f.

hispida, Ph. (A. w. r. Ju. ♄.) flowers leafy: branches straight, very hispid leaves long-lanceolate, hispid above, smooth beneath, glaucous both sides' nerve bristly beneath: margin ciliate: flowers very viscous; tube scarcely longer than the segments: teeth of the calyx oblong, rounded: filament exsert. 12 f.

canescens, Mx. (r. Ap. ♄.) flowers nakedish: leaves obovate, pubescent above, downy beneath, nerve not bristly: flowers not viscid; the tube scarcely shorter than the segments: teeth of the calyx very short, round-obtuse: stamens scarcely longer than the tube. *S.*

glauca, Lk. (E. w. J. ♄.) flowers leafy: branchlets hispid: leaves oblanceolate, acuminate, glabrous both sides, glaucous beneath; nerve bristled, margin ciliate: flowers very viscous; tube twice as long as the divisions and shorter than the calyx; divisions of the corol about equal to the filaments. Swamps. Low shrub.

nudiflora, W. (1) (early honeysuckle, pinxter blomachee. O. r. M. ♄.) sub-naked-flowered: leaves lanceolate-oblong, or oval, smooth or pubescent, uniform-coloured: nerves on the upper side downy, and beneath bristly; margin ciliate: flowers abundant, not viscous; their tubes longer than their divisions: teeth of the calyx short, oval, sub-rounded: stamens very much exsert. A variety, *coccinea*, has scarlet flowers and lanceolate leaves; another, *rutilans*, has deep-red flowers and minute calyx; another, *carnea*, has pale-red flowers, with red bases and leafy calyx; another, *alba*, has white flowers, with a middling calyx; another, *papilionacea*, has red flowers, with the lower divisions white, calyx leafy; another, *partita*, has flesh-coloured flowers, 5-parted to the base; another, *polyandria*, has rose-coloured flowers, with from 10 to 20 stamens. Woods. 2—6 f.

nitida, (swamp honeysuckle. w. J. ♄.) leafy-flowered: branches smoothish: leaves few, oblanceolate, sub-mucronate, leathery, glabrous both sides, and the upper side shining: nerve bristle-bearing beneath: margin revolute-ciliate: flowers viscous; tube a little longer than the divisions: calyx very short: filaments exsert. Leaves dark-green. Swamps.

viscosa, W. (white honeysuckle. O. w. J. ♄.) leafy-flowered: branches hispid: leaves oblong-obovate, acute, both sides glabrous and one-coloured; nerve bristle-bearing, margin ciliate: flowers viscous; tube twice as long as the divisions: teeth of the calyx very short, rounded: filaments scarcely longer than the corol. Flowers very sweet-scented. 5 f.

glauca, Lk. (fragrant honeysuckle. w. J. ♄.) leafy-flowered: branchlets hispid: leaves oblanceolate, acute, both sides glabrous, and glaucous beneath; nerve bristle-bearing, margin ciliate: flowers very viscous; tube of the corol twice as long as its divisions: calyx very short: filaments about equal to the divisions of the corol. Rather lower than the other species: flowers abundant. Perhaps a variety of *viscosa*. *S.*

Southern.

bicolor, Ph. (E. r. w. M. ♄.) naked flowered: leaves obovate, covered on both

(1) periclymenoides, Mx.

sides with fine whitish hairs; the nerve not bristly: flowers small, not viscid; the tube scarcely longer than the segments of the corol: calyx very short; one of its segments narrow, and 4-times longer than the rest: filaments longer than the tube: smaller branches hairy and hispid. 2—6 f.
Ipomœria.

B.

17—2. Baccharis. 49. 55.

halimifolia, Mx. (groundsel tree. w. S. ♄.) leaves obovate, gash-toothed above: panicle compound, leafy: fascicles peduncled. The whole shrub covered with white powder. Sea-coast, and river alluvion. 6—12. f. *S.*

Southern.

angustifolia, Mx. (L. S.) very glabrous: leaves linear, very entire: panicle compound, many-flowered. 8—10 f.

sessiliflora, Mx. (E. S.) leaves smooth, cuneate-obovate, toothed near the summit: heads axillary, sessile, scattered: scales of the calyx rufous at the tips. 3—5 f.
Conyza.

21—5. Bæmyces. (1) 57. 2.

roseus, (O) crust uniform, warty, white: peduncle (podetia) short, cylindric: receptacle sub-globose, pale-red. On the earth.

rufus, *Ach.* Crust rough, ashy-greenish: apothecia chesnut: pedicels short. On rocks.
Isidium.

17—3. Balduina. 49. 54.

Southern.

uniflora, N. (y. Ju. 2[.) stem 1-flowered, simple, pubescent: leaves narrow, obovate, entire: egret as long as the seed. 2 f.

multiflora, N. (y. S. 2[?) stem branching, many-flowered, glabrous: leaves linear; leaves of the involucre acuminate: egret short, cup-form. 30 i. Elliott considers these two species as belonging to different genera—the latter he proposes to call Actinospermum.
Galardia.

13—1. Ballota. 42. 39.

Exotic.

nigra, (false motherwort. 2[. naturalized, and grows wild about New-Haven.) leaves heart-form, undivided, serrate: leafets of the calyx acuminate. Ives.
Satureja.

17—4. Baltimora. 49. 55.

Southern.

recta, W. (E? y. Ju. ☼.) scabrous: stem dichotomous: leaves opposite, ovate, acuminate, serrate, petioled. It is doubtful, whether this grows north of the West India Islands.
Gymnostylus.

10—1. Baptisia. V. (2) 32. 93.

tinctoria, (wild indigo. O. y. Ju. 2[.) very glabrous and branching: leaves ternate, sub-sessile: leafets wedge-obovate, round-obtuse, (becoming black in drying:) stipules obsolete, oblong, acute, much shorter than the petioles: racemes terminal: legumes ovate, long-stiped. 2—3 f. *S.*

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(1) See Cenomyce. (2) Podalyria, W. Sophora, Wr.

cærulea, Mx. (1) (spiked indigo-weed. Canandaigua. b. Ju. 2f.) glabrous: leaves ternate, short-petioled; leafets oblong-wedge-form, obtuse: stipules lanceolate, acute, twice as long as the petioles: racemes spiked, elongated: legumes acuminate. *S.*

Southern.

perfoliata, M. (E. y. Ju. 2f.) very glabrous: leaves perfoliate, oval, entire, glaucous: flowers axillary, solitary, 1-flowered: legumes sub-globose.

lanceolata, Wr. (y. Ap. 2f.) pubescent: leaves ternate, cuneate, lanceolate, obtuse: flowers axillary, solitary; the terminal ones racemed. 1—2 f. The *uniflora* of Ph.

villosa, Wr. (y-w. J. 2f.) leaves ternate, lanceolate, hairy: stem and calyx villous: stipules linear: racemes terminal.

mollis, Mx. (E. 2f.) stem, leaves and calyxes minutely hairy: leaves ternate; leafets lance-rhomboid: stipules leafy, lanceolate: racemes in terminal spikes: teeth of the calyx acute.

alba, W. (O. w. J. 2f.) branches spreading: leaves ternate, petioled; leafets lanceolate, wedge-form at the base, obtuse, mucronate, glabrous: stipules subulate, shorter than the petioles: racemes terminal. 2 f.

bracteata, M. (O. w. Ap. 2f.) pubescent: branches spreading: leaves ternate, petioled; leafets lanceolate: racemes axillary, reclined: bracts large, broad-subulate, permanent. 2 f. The *leucophœa?* N.

Cercis.

14—2. BARBAREA. Br. 39. 63.

vulgaris, (2) (water radish, water rocket. O. y. M. 2f.) lower leaves lyrate-pinnatifid, with the terminal lobe roundish; upper leaves obovate, toothed. Banks of rivers. Sisymbrium.

21—2. BARBULA. 56. 4.

cæspitosa, stem very short, sub-simple: leaves densely crowded together, oblong-linear, mucronate, convolute at the apex on becoming dry: capsules cylindric, with a straight-subulate lid of nearly its own length.

acuminata, leaves ovate-acuminate, concave, twisted on becoming dry: stems erect, simple and divided, becoming renewed; elongations of the renewed parts stand out behind the capsules.

fallax, stem ramose: leaves recurve-spreading: perichæth nerveless: capsules oblong: lid obliquely beaked. On walls and bye-lanes, &c.

lanceolata, leaves lanceolate, sub-apiculate, crisped when dry: fascicle of ducts strong: capsule bottle-form, straight: lid oblique.

tortuosa, caulescent, rather high, ramose: leaves lance-linear, acute, sub-denticulate, may become crisped: capsule straight, slender-cylindric: lid subulate. Syntrichia.

4—1. BARTONIA. 20. 46.

paniculata, M. (3) (screwstem. O. w. Ju. ☼.) stem sub-ramose, 4-sided, and becoming spirally twisted: peduncles opposite, lower ones ramose. Stem almost leafless. Damp. 5—6 i. Exacum.

21—2. BARTRAMIA. 56. 4.

crispa, pedicels erect: leaves subulate, crisped, serrate at the margin, much contorted when dry. In the mountains about Williams Col.

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(1) australis, W. (2) Erysimum barbarea, L. (3) tenella, P. Andrewsia paniculata, B. Centaurella paniculata, Mx. C. autumnalis, Ph. Sagina virginica, W. Centaurium, P. in another part of his works.

vaseri, (1) stem elongated, slender: pedicels erect: leaves lanceolate, serrulate, scarcely twisted when dry. Among damp mountain rocks, &c.
longiseta, stem short; lesser stems somewhat simple: leaves not dense, subulate, keeled, and scarcely perceptibly denticulate; erect when dry: peduncle very long. Bryum.

13—2. BARTSIA. 40. 35.

pallida, (white painted cup. A. w-y. Au. 2f.) leaves alternate, linear, undivided; upper ones lanceolate; floral ones sub-oval, sub-toothed at the summit; all are 3-nerved: teeth of the calyx acute.
acuminata, Ph. (W. 2f.) leaves alternate, long-linear; floral leaves ovate, long-acuminate, 3-nerved, all undivided: flowers shorter than the bracts: teeth of the calyx acute.
tenuifolia, Ph. (W. y. Ju. 2f.) very hirsute: leaves alternate, linear, gash-pinnatifid; divisions filiform: bracts (yellow) membranaceous, oblong, obtuse, tooth-hastate at the base on each side, longer than the flowers: calyx short, hairy, with subulate teeth. 1 f.
alpina, W. (E. p. Ju. 2f.) leaves opposite, ovate, sub-cordate, obtuse-serrate, rugose: anthers hirsute. 6 i.
gymnandra, W. (W. b. 2f.) leaves sub-opposite, ovate, crenate; a pair of radical ones petioled: spike oblong; the whorled bracts compact. 7 i.
Note. The *coccinea* is removed to Nuttall's new genus, Euchroma. Rhinanthus.

21—4. BATRACHOSPERMUM. 57. 2.

moniliforme, frond alternately ramose, moniliform: branches attenuated. Rivularia.

5—1. BATSCHIA. 41. 42.

canescens, (puccoon, false bugloss. O. y. Ju. 2f.) whiteish-villose: leaves all oblong: calyx very short: divisions of the corol entire. A red substance covering the root is the puccoon paint of the Indians. *S.*
imeling, Mx. (W. r-y. Ap. 2f.) hirsute; floral leaves ovate: segments of calyx long sub-lanceolate. Dry woods. 10—16 i. *S.*

Southern.

longiflora, N. (W. y. Ju. 2f.) hirsute, erect: leaves approximating, long-linear: margin reflexed: fascicles fastigiate: tube of the corol sub-pentangular; border flat, with fringed crenatures.
decumbens, N. (W.) hirsute: stem decumbent: segments of the calyx and leaves linear: flowers scattered: lobes of the corol fringed-crenate, shorter than the tube. Cynoglossum.

3—2. BECKMANNIA.* 4. 10.

Southern.

crucaeformis, Jn. (W. Ju.) panicle 2-rowed, 1-sided, linear: calyx 1 or 2-flowered, with scarious margins: stigmas hirsute. Orthopogon.

Befaria, BEJARIA.

12—1. BEJARIA. 18. 50.

Southern.

racemosa, Ph. (E. w-r. J. ♄.) leaves lance-ovate, glabrous: flowers raceme-panicled, terminal: stem hispid. 3 f. Sand. Lewisia.

(1) gracilis, S.
* This is printed Bruchmannia in Nuttall's genera, p. 48. It was carelessly copied into this Manual, at p. 19.

17—2. Bellis. 49. 55.

Exotic.

perennis, (daisy. w. & p. Ap. 2ℓ.) leaves obovate, crenate: scape naked, 1-flowered. Grows wild in cultivated fields in Pittsfield, Mass.

Southern.

integrifolia, Mx. (W.) caulescent: spread-branched: leaves entire; lower ones obovate; upper ones lanceolate: leafets of the calyx very acute, and acuminated with a hair. Togetes.

6—1. Berberis. 54. 78.

vulgaris, (1) (barberry. y. M. ♄.) branches punctate: prickles mostly in threes: leaves obovate, remotely serrate: flowers racemed.

pinnata, (W. y. Ap. ♄.) sarmentose, unarmed: leaves pinnate; leafets mostly in three pairs, oblong, repand-toothed, veiny: petals 2-toothed. The aquifolium. Ph.

nervosa, Ph. (W. y. Ap. ♄.) sarmentose, unarmed: leaves pinnate; leafets 6-paired, ovate-oblong, repand-serrate, somewhat 5-nerved: petals entire. Prinos.

Bernhardia, Psilotum.

5—2. Beta. 12. 29.

Exotic.

vulgaris, (beet. g. Au. ♂.) flowers heaped together: lower leaves ovate.

cicla, (white beet, scarcity. ♂.) flowers in threes: radical leaves petioled, cauline ones sessile: lateral spikes very long. Kochia.

19—12. Betula. 50. 99.

populifolia, W. (2) (white birch, poplar birch. Ju. ♄.) leaves deltoid, long-acuminate, unequally serrate, very glabrous: scales of the strobile with rounded lateral lobes: petioles glabrous. 30—40 f.

excelsa, W. (3) (tall birch, yellow birch. O. J. ♄.) leaves ovate, acute, serrate: petioles pubescent, shorter than the peduncle: scales of the strobile with rounded lateral lobes. 70—80 f.

rubra, Mx. (4) (red birch. M. ♄.) leaves rhombic-ovate, doubly-serrate, acute, pubescent beneath, base entire: pistillate ament ovate: scales villose: divisions linear, equal. 70 f. Excellent cabinet timber. *S.*

papyracea, W. (5) (paper birch, canoe birch. ♄.) leaves ovate, acuminate, doubly-serrate: veins hirsute beneath: petiole glabrous: pistillate ament peduncled, nodding: scales with lateral, short, sub-orbicular lobes. Has a paper-like bark, of which the Indians construct canoes.

lenta, W. (6) (spicy birch, cherry birch, black birch. O. M. ♄.) leaves heart-ovate, sharp-serrate, acuminate: nerves and petioles pilose beneath: scales of the strobile glabrous, with obtuse equal lobes having elevated veins. Large tree, whose wood is much like mahogany; very sweet-scented. 80 f. *S.*

glandulosa, (scrub birch. M. ♄.) branches glandular-dotted, glabrous: leaves obovate, serrate, at the base entire, glabrous, sub-sessile: pistillate ament oblong, scales half-3-cleft: seed orbicular, with a narrow margin. 2—8 f. Very abundant in the marshes about Stockbridge, Mass. It seems to be intermediate between Betula and Alnus.

nana, (dwarf birch. M. ♄.) very small and glabrous: leaves small, wedge-orbiculate, gash-crenate, net-veined beneath: scales of the ament deeply 3-parted, divisions oblong: seeds oblong, nearly wingless. Swamps.

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(1) canadensis, N. (2) acuminata, Eh. (3) lutea, Mx. (4) lanulosa, Mx. fl. nigra, L. (5) papyrifera, Mx. (6) nigra, Wm. carpinifolia, Eh.

pumila, W. (1) (dwarf birch. O. J. ♄.) branches pubescent, dotted: leaves orbicular-obovate, petioled, dense-pubescent beneath: pistillate ament cylindric. 2—3 f. Carpinus.

17—3. Bidens. 49. 55.

cernua, (water beggar-ticks. O. y. Au. ☼.) flowers sub-rayed, drooping: outer calyx longer than the flower: leaves lanceolate, sub-connate, toothed. One variety, *minima*, has sessile leaves and erect flowers and seeds; another variety, *coreopsis*, has serrate, opposite, clasping leaves.

chrysanthemoides, W. (2) (daisy beggar-ticks. O. y. Au. ☼.) flowers rayed, drooping, the ray thrice as long as the sub-equal calyx: leaves oblong, tapering to both ends, toothed, connate. Flowers large: 2, 3 or 4 awns to a seed. Wet. *S.*

tripartita, (three-fingered beggar-ticks. Au. ☼.) flowers discoid: outer calyx longer than the flower: seeds with 3 awns: leaves 3-cleft. 3 f. Swamps. Bigelow finds this species near Boston; probably we have labelled it by some other name.

frondosa, (burr marygold. O. y. Ju. ☼.) flowers discoid: outer calyx six times as long as the flower: leafets ciliate at the base: lower leaves pinnate; upper ones ternate, lanceolate, serrate. *S.*

connata, W. (3) (y. Ju. ☼.) flowers discoid: outer calyx thrice as long as the flower: cauline leaves ternate: lateral leafets connate; floral ones oblong-lanceolate. *S.*

pilosa, W. (Ju. ☼.) flowers discoid: outer calyx of the length of the inner: lower leaves pinnate; upper ones ternate: leafets oblong, a terminal lanceolate one twice as long as the rest. *S.*

bipinnata, (hemlock beggar-ticks. y. Ju. ☼.) flowers sub-rayed: outer calyx of the length of the inner: leaves doubly-pinnate; leafets lanceolate, pinnatifid. *S.*

beckii, T. (water marygold. Au. y. 2f.) sub-mersed leaves capillary, divided into many parts, dichotomous: flowers erect, terminal, solitary. Flowers radiate. A new species discovered in a pond near Schenectady, N. Y. by Dr. Lewis C. Beck, and named by Dr. John Torrey, in honor of the zealous and persevering discoverer.

Southern.

gracilis, T. & J. (W. y.? 2f.) very glabrous: leaves pinnate-5-cleft: divisions narrow-linear, entire: stem sub-ramous, erect: flowers terminal, solitary, long-peduncled, discoid: bracts half as long as the involucre. 2 f. Coreopsis.

13—2. Bignonia. 40. 45.

radicans, (trumpet flower. O. r. & y. Ju. ♄.) leaves pinnate: leafets ovate, toothed, acuminate: corymb terminal: tube of the corol thrice as long as the calyx: stem rooting. Most beautiful climbing shrub. One variety, *flammea*, has yellow-scarlet flowers; another variety, *coccinea*, has bright scarlet flowers. Cultivated. *S.*

Southern.

crucigera, W. (E. y-r. J. ♄.) leaves conjugate, cirrose; lower ones ternate: leafets heart-ovate, acuminate: racemes axillary: stem muricate.

capreolata, W. (E. r. March. ♄.) leaves conjugate, bearing tendrils, the lower ternate: leafets ternate, cordate, acuminate: racemes axillary: stem roughened. A vine. Woods. Ruellia.

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(1) nana, Kalm, not W. (2) Coreopsis perfoliata, Wr. (3) crysanthemoides, Mx.

Bignonia, CATALPA.

21—3. BLASIA. 57. 3.

pusilla, Sz. (dry mill-dams.) capsule marked, immersed in the frond, ovate-oblique, terminating in an open tube, permanent: frond orbicular or heaped together in abundance, beautifully green, net-veined, dichotomous or trichotomous, bearing capsules on the apex. Sphaerocarpus.

21—1. BLECHNUM. 55. 5.

borealis, (Roman fern. Au. 2f.) barren frond pinnatifid; divisions lanceolate, obtusish, parallel: fertile frond pinnate: leafets linear, acuminate.

serrulatum, (2f.) frond pinnate: leafets lanceolate, tapering to both ends, at the base decurrent, sharp-serrate. I do not know that we have a Blechnum in the northern district. Woodwardia.

18—1. BLETIA. (1) 7. 21.

Southern.

aphylla, N. (y. r. Au. 2f.) leafless: scape terete, scaly, tapering near the summit; the scales ovate, alternate: lip without a spur. 18 i.

verecunda, N. (E. Ju. 2f.) radical leaves broad-lanceolate, plaited, nerved: scape many-flowered: inner petals converging: lip inflated, with an emarginate border, crisped, furrowed. Calypso.

1—2. BLITUM. 12. 29.

capitatum, (strawberry blite. O. r. J. ☼.) heads in a terminal spike, not intermixed with leaves: leaves triangular, toothed. 15 i. *S.*

virgatum, (slender blite. r. J. ☼.) lateral heads scattered, top ones leafy: leaves triangular-toothed.

maritimum, N. (sea blite. L. g. S. 2f?) calyx membranaceous: clusters axillary, spiked, naked: leaves lanceolate, tapering to each end, gash-toothed. Salt marshes. 2—3 f. Very branching.

Southern.

chenopodioedes, N. (W. ☼.) leaves sub-hastate-triangular, sub-dentate, tapering to both ends: glomerules axillary, leafy: seeds distinct, punctate, not berried. Dry. Corispermum.

17—2. BOEBERA. 49. 55.

Southern.

chrysanthemoides, W. (W. y. Au. ☼.) stem panicled: leaves opposite, subpinnate, glabris, acute. Trichophyllum.

19—4. BŒHMERIA. 53. 98.

cylindrica, W. (2) (false nettle. O. g. Ju. 2f.) leaves opposite, ovate-oblong, acuminate, toothed, glabrous: flowers sub-dicecious: staminate spikes glomerate, interrupted; pistillate spikes cylindric: stem herbaceous. Damp. 18 i. *S.*

lateriflora, (E. Ju. 2f.) leaves alternate, ovate-lanceolate, acuminate, serrate, rough: flowers glomerate, lateral: stem herbaceous. Leaves 3-nerved, and on long petioles. *S.* Urtica.

3—1. BOERHAAVIA. 54. 32.

Southern.

erecta, (E. w. p. J. 2f.) stem columnar, trichotomous, rough below, smooth above: flowers in corymb-panicles. Calymenia.

(1) Cymbidium. (2) Urtica cylindrica, L.

21—6. Boletus. 58. 1.

1. *Pileus fleshy, cushion-like, easily separated from the elongated tubes.*

annulatus, pileus cushioned, campanulate, viscid, becoming yellow-livid, with spots, from brick-coloured streaks becoming red: pores yellow: stipe annulated. Among pines, &c. in autumn.

cortinatus, stiped: pileus yellow, sub-viscid, orange in the centre; the fleshy part white, firm and ridgy, or crisped: tubes yellow: curtain-like volva white: stipe thick, especially towards the base.

rufus, pileus dilated, plano-convex, brick-red: pores white: stipe long, torn-wrinkled: scales becoming black. In grassy woods, &c. autumn. This is a variety of the *aurantius*.

scaber, pileus sub-rugose, grey-sooty-yellow: pores becoming pale-white, depressed around the attenuated stipe: scales becoming black. In beech woods, &c. the beginning of autumn: at length it becomes dry, hard, and dark-coloured.

circinans, in groups: pileus viscid, sub-repand, thick, straw-colour or livid-yellow: pores acute, yellow: stipe somewhat slender, shortish yellowish, rough, with dark specks. Among pines, &c. early in autumn.

sub-tomentosus, middle size: pileus cushioned, plano-convex, sub-tomentose, yellowish ash-colour; the fleshy part not very changeable: pores large: stipe somewhat slender, reddish in the middle, or yellowish and one-coloured. Grows in woods in autumn.

radicans, pileus cushioned, yellow-cinereous: margin involute, sub-tomentose: pores citron-yellow: stipe smooth, rooting, tomentose, one-coloured. In oak woods, &c. autumn.

reticulatus, pileus cushioned, dilated, dirty-yellow, mostly tessellated and chinked; fleshy part becoming bluish: pores middle size, becoming yellow: stipe shortish, glabrous, of the same colour of the pileus, red within. Pileus often 5 or 6 inches broad.

edulis, pileus cushioned, very broad, dark yellowish-purple; the fleshy part not changeable: pores at first filled and whitish, afterwards pale-yellow: stipe tuberous, sub-ventricose, reticulate, reddish-grey. In woods, &c. autumn.

luridus, large: pileus cushioned, dark olive: pores equal, at first red, at length orange: stipe elongated, red, reticulate, sub-bulbous. In July.

2. *Pileus fleshy, coriaceous, mostly somewhat corky: tubes shortish, connected with the substance of the pileus.*

(Pileus entire: stipe central, or a little out of the centre, and perpendicular.)

brumalis, pileus convex, sub-umbilicate, of a darkish shade, becoming yellow: margin ciliate: pores oblong, white. Late in autumn, on decaying trunks, &c.

perennis, coriaceous, tenacious, cinnamon-colour: pileus thin, with zones mostly connate. On the earth, about decaying trunks, &c.

(Pileus halved: stipe lateral.)

frondosus, very branching: pilei many, halved, sooty-grey. About roots of oaks, &c. in autumn. The whole group or mass sometimes a foot broad.

lucidus, pileus very tough, coriaceous, chesnut-colour, shining, with concentric furrows: pores minute, white: stipe variable. On trunks of trees, very large, becoming tawny.

badius, sub-cespitose: pileus glabrous, tough, liver-brown, paler at the margin:

pores minute, pale: stipe lateral, short, thick, dark cinereous. On hollow logs, &c. in autumn.

varius, sub-solitary: pileus tough, reddish-yellow, halved or entire: stipe sub-lateral, elongated, black from the middle downward. On trunks, 1 to 2 inches broad.

(Pileus halved; without a stipe.)

citrinus, imbricate, halved, fleshy, glabrous, citron-yellow. Roots of oaks, &c. in summer and autumn.

odoratus, halved, odoriferous, sub-deformed: pileus rugose, with zones or parallel bands; dark shade at the base: margin arched, and cinnamon-colour beneath, opake. On trunks.

marginatus, simple or sub-imbricate: pileus thick, hard, tuberculate, becoming red or reddish-yellow: margin issuing a white juice: pores pale, or light citron-yellow. Very hard and hairy; about 4 inches. When recent, acid drops of a liquid issue from the margin.

igniarius, dilated, smooth, cuticle in ridges: pileus hard, becoming dark at the base, at the margin cinnamon-colour, beneath yellowish-white. Grows on trunks. General form like a horse's hoof. It is called *touch-wood*.

betulinus, sub-stiped, largish: pileus flesh-corky, reniform, dirty reddish-yellow, white beneath. On roots, &c.

fomentarius, halved, hard: pileus sub-triquetrous, with obsolete belts, dirty-ash-colour: pores at first white-glaucous, at length sub-ferruginous. Used for tinder.

velutinus, corky, simple: pileus convex, thin, hirsute, white: pores minute, dirty-white. About an inch and a half broad, somewhat zoned. On dry trunks, &c.

lutescens, sub-cespitose, corky: pileus depressed, thin, tomentose, pale; with hirsute zones becoming yellow. On trunks, &c. with the last, which it resembles, but is rather broader.

versicolor, cespitose, coriaceous: pileus thin, with bluish many-coloured zones: pores white. On dry trunks. Autumn and winter.

cinnabarinus, in groups, uniformly of a cinnabar or vermilion colour: pileus thickish, ridgy, obsoletely zoned, sub-tomentose. One or two inches diametre.

3. *Open or effuse, upside down*, (that is, the pores or tubes on the upper side:) *pileus mostly obsolete.*

destructor, white: pileus unequal, undulated, rugose: pores roundish-obtuse. Grows in buildings, &c. which it tends to destroy. Its substance is fibrous, and becomes dry.

radula, pale-white, sub-tomentose: pores acute, unequally prominent, rough.

4. *Tubes free among each other.*

hepaticus, fleshy, blood-red, halved: tubes free, becoming yellow. Roots of oaks, &c. in autumn. Sistotrema.

17—2. BOLTONIA. 49. 55.

asteroides, (false aster. w-r. Au. 2f.) leaves very entire: flowers long-peduncled: seed oval, glabrous, sub-awnless. *S.*

glastifolia, (false chamomile. w. Ju. 2f.) lower leaves serrate: flowers short-peduncled: seeds obcordate, apparently winged, pubescent: awns of the egret two, of equal length with themselves. *S.*

Southern.

diffusa, E. (E. w. y. S. 2f?) leaves lance-linear, margin scabrous: panicle diffuse, many-flowered: seed obovate, emarginate, slightly winged: egret two long awns. 2 f. Chrysanthemum.

11—13. Bootia. 35. 92.

sylvestris,* Bw. (false avens. E. w. J. 2[.) hairy or downy: stem erect, furrowed: lower leaves pinnate; leafets sessile, oval, doubly toothed: flowers in small corymbs, sub-sessile: stipules half-ovate, acuminate. 2 f.
Potentilla.

5—1. Borago. 41. 42.

Exotic.

officinalis, (borage. b. Ju. ☼.) leaves alternate: calyx spreading.
africana, (☼.) leaves opposite, petioled, ovate: peduncle many-flowered.
Anchusa.

17—1. Borkhausia. 49. 53.

Southern.

caroliniana, N. (E. y. March. 2[?) leaves lance-oblong, glabrous, rarely toothed, sometimes pinnatifid: stem erect, few-flowered: peduncles long. 2 f.
Troximon.

12—5. Borrera. 57. 2.

ciliaris, frond greenish; divisions linear, ramose, attenuated; ciliate at the apex, white beneath, channelled: receptacles sub-terminal: disk concave, at length flat, dark sooty-yellow and grey, with a frond-like, crenate and fringed margin. On trunks and rocks.
leucomela, frond becoming pale; divisions erect, linear, many-cleft, attenuate, ciliate, very white beneath, sub-pulverulent, somewhat channelled: disk of the receptacles flat, dark-grey, with a frond-like, ciliate margin. On trunks of trees.
chrysophthalma, frond yellowish-red, naked both sides, one-coloured; divisions linear, flattish, pinnatifid-branched, with little fibres at the apex: receptacles sub-terminal; disk orange, with frond-like, fibrous-ciliate margins. Common on fences and trees.
exilis, frond pale-white; divisions very branching, entangled a little, compressed, capiliary, attenuated: receptacles scattered: disk flattish, saffron-colour, with a thin, entire, frond-like margin. On trees, &c.
tenella, (on bark, or on the ground. Halsey.) frond white: segments narrow, pinnatifid, convex and ciliate at the apex.
furfuracea, (on bark, &c. Halsey.) segments of the frond channelled beneath, bluish-black.
Cetraria.

20—2. Borya. 10. 6.

Southern.

porulosa, Mx. (L.) leaves lance-oblong, obtuse, sessile, coriaceous, dotted under side; margins revolute.
acuminata, Mx. (E.) leaves lance-oval, tapering at each end, petioled, membranaceous, slightly serrulate.
Ceratiola.

21—1. Botrychium. 55. 5.

fumarioides, W. (1) (grape fern. J. 2[.) scape naked: frond glabrous, radical, 3-parted, 2-pinnate; leafets lunate, crenate: spikes pinnate. *S.*
obliquum, W. (J. Ju.) scape below, 1-fronded: frond sub-biternate; leafets oblong-lanceolate, serrulate, dilated at the base, unequally heart-form: spikes doubly pinnate. Perhaps only a variety of the last.
dissectum, (J.) scape below, 1-fronded; frond 3-parted, 2-pinnatifid; divisions linear, 2-parted, at the apex 2-toothed. *S.*

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* This plant has been incorrectly referred to the genera, Potentilla and Geum. The absurdity has often been shewn; and we are under obligation to Dr. Bigelow for correctly defining and naming it. Potentilla confertiflora, T.

(1) Botrypus lunarioides, Mx. Osmunda biternata, Lk.

virginicum, W. (1) (O. J. Ju.) hirsute: scape in the middle fronded: frond sub-ternate, 3-parted, 2-pinnatifid; leafets gash-pinnatifid; divisions obtuse, sub-3-toothed: spikes 2-pinnate, divaricate. Large. (Rattlesnake fern. *S.*

gracile, Ph. (J.) glabrous: scape in the middle, fronded: frond 3-parted, 2-pinnatifid; divisions gash-sub-pinnatifid, acute, sub-toothed: spikes slender, pinnate, erect. Smaller. Var. of the last?

simplex, Hitchcock. (E. J.) glabrous: scape below, 1-fronded: frond simple, 3-lobed or 3-cleft: segments unequal: spike sub-compound, interrupted, unilateral: capsules sessile. Capsules the size of mustard seed. Grows in dry hilly pastures, about three or 4 inches high. Vid. Amer. Jour. Sci. vol. 6, p. 103. Psilotum.

21—6. BOVISTA. 58. 1.

nigrescens, large, becoming of a dark shade, plicate beneath. Form either globose or round-oblong, an inch or two in diameter. In shady woods. Lycoperdon.

3—2. BRACHYELYTRUM. 4. 10.

erectum, P. (false dropseed. A. Ju. 2[.) pubescent: culm strong, simple: panicle with few branches. Taken from the Muhlenbergia. The specific name, *aristatum*, has been substituted by some. *S.* Beckmannia.

17—2. BRACHYRIS. 49. 55.

Southern.

carothrae, Ph. (W. y. 2[.) stems numerous, angled, scabrous, naked below, corymbed above: branches few-flowered at the top: leaves linear, close-pressed, obsoletely 3-nerved, scabrous both sides. Taken from Solidago. The specific name, *euthamiae*, is substituted by some. 7 i. Donia.

Brachystemum, PYCNANTHEMUM.

Brasenia, HYDROPELTIS.

14—2. BRASSICA. 39. 63.

Exotic.

orientalis, (perfoliate cabbage. ♂.) leaves heart-form, clasping, glabrous; radical ones entire: silique 4-sided.

napus, (kale or cole. ♂.) root caulescent, fusiform: leaves smooth; upper ones heart-lanceolate, clasping; lower ones lyrate-toothed. (Rape.) Nuttall supposes this species grows native in ledges of rocks near Arkansas.

rapa, (turnip. ♂.) root caulescent, orbicular, depressed, fleshy: radical leaves rough; cauline ones very entire, smooth. Var. *ruta-baga*, has a turbinate, sub-fusiform root.

oleracea, (common cabbage, including all the varieties caused by culture. ♂.) root caulescent, terete, fleshy: leaves smooth, glaucous, repand-lobate. Stanleya.

3—2. BRIZA. 4. 10.

media, (quaking grass, rattle-snake grass? E. J. 2[.) panicle erect: spikelets heart-ovate, about 7-flowered: calyx smaller than the flowers. 1 f. Probably introduced. Bw.

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(1) Osmunda virginica, L. Botrypus virginicus, Mx.

Exotic.

maxima, (rattle-snake grass? ☉.) spikes cordate, with 17 florets in each: calyx chesnut-brown. Poa.

6—1. BRODIÆA. 9. 17.

Southern.

grandiflora, S. (W. Ap. 2f.) umbels many-flowered: flowers pedicelled: stamens alternate, with membranaceous margins. Called Missouri hyacinth. Crinum.

3—2. BROMUS. 4. 10.

secalinus, W. (chess. O. J. ☉.) panicle nodding: spikelets ovate, compressed: glumes naked, distinct: awns shorter, subulate, straitish-zigzag. Probably from Europe; common in rye and wheat-fields. Florets about 10 in each spikelet: leaves somewhat hairy. *S.*

ciliatus, W. (1) (2f.) panicle nodding: spikelets oblong, compressed, 6 to 8-flowered: florets awned at the margin, ciliate-villose: sheaths and both sides of the leaves sub-pilose: culm bearded at the joints. *S.*

pubescens, M. (broom grass. J. 2f.) culm hairy below: joints brown: stipules very short: panicle at length nodding, pubescent: calyx less than corol, 8 to 12-flowered: corol pubescent, one valve awned beneath the apex. Var. *ciliatus*, has a ciliate valve in each corol; 8 to 10-flowered. Var. *canadensis*, has one very hairy, 7-nerved valve to each corol, and a short bristle.

purgans, W. (Au. 2f.) panicle nodding: spikelets lanceolate, terete: florets awned, pilose; awns erect: leaves glabrous both sides, their sheaths pilose. *S.*

mollis, S. (Ju.) panicle erect, compact: peduncles ramose: spikelets ovate: florets imbricate, depressed, nerved, pubescent: bristle straight, nearly as long as the corol: leaves with soft hairs.

Southern.

altissimus, Ph. (W. J. 2f.) panicle nodding, spikelets oblong, about 6-flowered: florets pubescent; outer valve 3-nerved, with a short awn: leaves and sheaths glabrous: culm glabrous, very tall. 7 f.
Arrhenatherum.

20—4. BROUSSONETIA. 53. 98.

Exotic.

papyrifera, (paper mulberry. M. ♄.) leaves sub-cordate, lobed or undivided: roots sending off suckers. 20 f. Dn. Nyssa.

Bruchmannia, p. 19, should be BECKMANNIA.

8—3. BRUNNICHIA. 12. 28.

Southern.

cirrhosa, (A. 2f.) climbing: leaves cordate, acute, glabrous, entire: panicles terminal: bracts ovate, mucronate. Cardiospermum.

21—2. BRYUM. 56. 4.

1. *Staminate flowers peduncled, leafless.*

androgynum, leaves lanceolate, acute, imbricate-spreading: capsules erect, oblong: lid conic. In damp woods.

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(1) canadensis, Mx.

2. *Staminate flowers sessile, terminal, bud-form: capsules peduncled.*

carneum, stem simple: leaves lanceolate, acute, entire, reticulate, remotish: capsule pendulous, ovate. In damp shades.

argenteum, stem ramose at the base, cespitose: leaves ovate, concave, mucronate, imbricate, glaucous-silvery: capsule ovate-oblong, pendulous. On walls, houses and sandy soils.

coespiticium, stem ramose at the base: leaves lance-ovate, acuminate, imbricate: capsule oblong, pendulous: lid convex. On walls, houses, &c.

3. *Staminate flowers sessile, terminal, with a disk-like tuft of leaves.*

roseum, stem erect: leaves crowded together, stellate, oblong, entire, acute: capsule oblong: lid conic. In woods and bushes.

cuspidatum, leaves lance-ovate, serrate: capsule ovate, pendulous: lid conic, obtuse. In moist shades.

ciliare, Greville, (Canada.) stem elongated: leaves obovate, acutish, finely reticulate-margined, serrate-ciliate; serratures jointed: capsule oblong, pendulous, pale: lid a conical hemisphere: apex minute.

punctatum, stem erect, sub-simple: leaves obovate, entire, punctate-reticulate: capsule ovate: lid subulate, incurved. In damp shady lawns, &c.

4. *Flowers perfect; germs nodding.*

nutans, stem sub-simple: leaves lanceolate, acute, keeled: capsule obovate, nodding; lid convex, short-mucronate. In dry barren situations.

Arrhenopterum.

13—2. BUCHNERA. 40. 34.

americana, W. (blue-hearts. O. b. Au. 2f.) stem simple: leaves lanceolate, sub-dentate, rough, 3-nerved: flowers remote, spiked. In the herbarium this plant becomes black. 1 f. *S.* Antirrhinum.

5—1. BUMELIA. (1) 43. 48.

Southern.

lycioides, Ph. (E. g-w. M. ♄.) spinous, erect: leaves broad-lanceolate, smooth both sides. Fruit a drupe. Wood hard and heavy.

reclinata, Ph. (E. J. ♄.) spiny, spreading: sterile branches spreading: leaves small, obovate, very smooth.

lanuginosa, (g-y. J. ♄.) spiny: branches expanding, hairy: leaves lance-oval, woolly under side. 10 f.

tenax, (g-y. J. ♄.) spiny: leaves lance-wedge-form, mostly obtuse, silk-downy beneath. 25 f.

oblongifolia, N. (W. ♄.) spiny: leaves oblong-ovate, obtuse, narrowed at the base, hairy beneath: flowers conglomerate, sub-sessile, numerous: segments of the nectary 3-cleft. 18 f. Lisianthus.

14—1. BUNIAS. (1) 39. 63.

maritima, W. (sea-rocket. L. p. Ju. ☼.) var. *americana*, T. leaves wedge-oblong, obtuse, sinuate-toothed: joints of the silicle 1-seeded; upper ones ovate, acute. Plant fleshy, corymbed.

edentata, Bw. (L. Ju. ☼.) leaves obovate, sinuate: silicle with 2 smooth, one-seeded, toothless, joints. Plant fleshy, in terminal spikes or racemes. Thlaspi.

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(1) Sideroxylon, Mx. (2) Cakile.

17—2. BUPHTHALMUM. 49. 55.

Southern.

frutescens, (ox-eye, y. J. ♄.) leaves opposite, wedge-lanceolate, fleshy, whitish: petioles 2 toothed: stem shrubby. 2 f.

angustifolium, Ph. (E. 2ℓ.) leaves alternate, linear, broader near the summit, entire, glabrous: involucre of acute, lanceolate, leafets.

sagittatum, Ph. (W. y. J. 2ℓ.) tomentose: radical leaves long-petioled, oblong, sagittate, entire, somewhat 3-nerved; cauline ones oblong, tapering into the petiole: stem about 3-flowered: outer leafets of the calyx longer than the disk. Helianthus.

Burmannia, TRIPTERELLA.

21—2. BUXBAUMIA. 56. 4.

aphylla, (leafless moss.) capsule long-peduncled: leaves none. In barren places. Funaria.

19—4. BUXUS. 38. 96.

[Generic character is here given, it having been omitted after MORUS, p. 68.]

Staminate flowers—calyx 3-leaved: petals 2: germ a mere rudiment. Pistillate flowers—calyx 4-leaved: petals 3: styles 3: capsules 3-beaked, 3-celled: seeds 2. 38—96. (box.)

Exotic.

sempervirens, (box. ♄.) leaves ovate, petioled, somewhat hairy at the margin: anthers ovate, arrow-form. Var. *angustifolia*, leaves lanceolate. Var. *suffruticosa*, leaves obovate, stem hardly woody. Pachysandra.

C.

Cabomba, NECTRIS.

17—1. CACALIA. 49. 55.

suaveolens, W. (E. w. Au. 2ℓ.) stem herbaceous: leaves petiolate, hastate-sagittate, serrate, glabrous, green on both sides: flowers corymbed, erect: calyx many-flowered. 3—4 f. *S.*

atriplicifolia, W. (orach caraway. O. w. Au. 2ℓ.) stem herbaceous: leaves petioled, glabrous, glaucous beneath; radical ones cordate, toothed; cauline ones rhomboid, sub-2-toothed both sides: flowers corymbed, erect: calyx 5-flowered. Flowers small. *S.*

reniformis, W. (E. w. Au. 2ℓ.) stem herbaceous: leaves petioled, glabrous beneath, pilose at the veins; radical ones heart-kidney-form, repand-toothed; cauline ones toothed, at the base wedge-form, entire: corymbs level-topped: calyx many-flowered. 5—10 f.

Southern.

ovata, Wr. (E. w. S—Oc.) stem herbaceous: leaves ovate, obtuse; obtusely toothed, nerved, slightly glaucous beneath; the lower ones petioled: involucre 5-leaved, 5-flowered. 3—4 f.

lanceolata, N. (E. y-w.) stem herbaceous: leaves narrow lanceolate, acute at each end, remotely toothed, nerved, slightly glaucous beneath: involucre 5-leaved, 5-flowered. 4—6 f.

tuberosa, N. (W.) root tuberous: stem herbaceous: leaves petioled, ovate, obtuse, 5-nerved, entire: flowers corymbed, sub-fastigiate: calyx naked, 5-flowered, 5-leaved: leafets carinate. Flowers nearly white. 4—6 f. Sparganophorus.

11—1. Cactus. 13. 85.

opuntia, L. (prickly pear. E. y. J. ♃.) proliferous: articulations compressed, ovate: bristles fascicular. The plant appears like a series of thick succulent leaves, one growing from the top of another. *S.*

Southern.

viviparus, Ph. (W. r. Ju. ♃.) roundish, manifold or cespitose: tubercles cylindric, bearded, grooved and proliferous above the furrows.

mamillaris, L. (W.) tubercles ovate, terete, bearded: flowers scarcely exserted: berries scarlet, about equal with the tubercles.

ferox, N. (W. y. & r. Ju.) proliferous: articulations large, nearly circular, spiny: spines double; larger ones radiate, persistent: fruit dry, spiny.

fragilis, N. (W.) proliferous: articulations short, oblong, somewhat terete, fragile: spines double: flowers solitary, small: fruit dry, spiny.

cylindricus, (W. p. ♄.) very branching; terminal branches consisting of long cylindrical articulations: surface reticulated with decussate furrows.

Prunus.

Cakile, Bunias.

19—12. Caladium. 2. 7.

glaucum, E. (E. J. ♂.) stemless: leaves glaucous, hastate-cordate, acuminate; lobes oblong, obtuse: spathe cucullate, the summit oval lanceolate, white, longer than the spadix. 12—15 i. *S.* Calla.

3—2. Calamagrostis. 4. 10.

coarctata, T. (1) (E. Ju. ♃.) panicle somewhat spiked, conglomerate: calyx a little longer than the corol, carinate: corol longer than the egret, awned a little below the tip. 3—5 f. *S.* Psamma.

13—1. Calamintha. 42. 39.

Southern.

nepeta, W. (r-w. J. ♃.) pubescent, very branching: leaves ovate, obtuse, sub-serrate: whorls peduncled, dichotomous-corymbed, longer than the leaves: down or wool of the calyx prominent.

grandiflora, Ph. (E. r. Ju.) suffruticose: leaves ovate, obtuse, crenate, smooth: whorls many-flowered, on short peduncles, shorter than the leaves. 12—18 i.

Ceranthera.

17—4. Calendula. 49. 55.

Exotic.

officinalis, (pot marygold. y. ☼.) seed keeled, muricate, incurved.

Chaptalia.

21—5. Calicium. 59. 2.

1. *Apothecium sessile.*

tigillare, the frond appears first in small yellow spots, upon which the black apothecia are seated; the intervals between these afterwards fill up, and the whole crust becomes continuous. Common on fences and old posts.

turbinatum, puffs turbinate, black, rather polished: disk dark, opake, puncticulate, within a thick contracted margin. On trunks of trees, &c.

stigonellum, (fungus lichen.) crust sub-contiguous, unequal, becoming white, or none: receptacles (puffs) sessile, sub-globose, black, glabrous: disk puncticulate, at length flattish, opake: margin thin, shining. In bark.

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(1) cinnoides, B.—canadensis, N.—Arundo stricta, Sl. glauca, M.

2. *Apothecium stipitate.*

canaliculare, *Ach. Syn.* Apothecia sub-globose: pedicels cylindric, thick. Old fences and posts.
cachelinum, var. *quercinum*, *Id.* Crust ashy or none: apothecia turbinate: pedicels filiform, short. Old fences and posts. Gyrophora.

19—12. CALLA. 2. 7.

palustris, W. (water arum. O. w. J. 2ℓ.) leaves sub-roundish, heart-form, acute: spathe ovate, cuspidate, spreading when mature. Grows in wet places. Euphorbia.

4—1. CALLICARPA. 46. 72.

Southern.

americana, W. (E. r. J.) leaves serrate, tomentose underneath. 3—4 f. Centaurella.

12—4. CALLIGONUM. 12. 26.

[Generic character is here given, it having been omitted after PÆONIA, p. 47.]

Calyx 5-parted, inferior: corol none: styles 4: nut 1-celled, 4-winged. Often dioecious. Stamens 12—16. 12. 26.

Southern.

canescens, Ph. (W. Ju. ☽.) dioecious, pulverulent-tomentose: leaves lanceolate: flowers in axillary glomerules, spiked towards the ends of the branches: fruit winged; veins of the wings crowned with teeth. Hydrastis.

Callirhoe, NUTTALLIA.

1—2. CALLITRICHE. 12. 38.

verna, *var. intermedia*, W. (1) (water chickweed, or starwort. O. w. M. ☼.) upper leaves spatulate-obovate; lower ones linear, obtuse and emarginate: flowers polygamous: margin of the capsule obtuse. *S.*
autumnalis, L. (E. Au. S. ☼.) leaves all linear, 1-nerved, truncate or emarginate: capsule with an acute margin: flowers all perfect.
terrestris, R. (2) (O. Ju. ☼.) procumbent, diffuse: leaves oblong, uniform, rather obtuse: capsule grooved on the margin. Blitum.

6—3. CALOCHORTUS. 10. 17.

Southern.

elegans, Ph. (W. w. & p. 2ℓ.) scape nearly 3-flowered, shorter than the single leaf: petals woolly within. Nolina.

Calopogon, CYMBIDIUM.

12—13. CALTHA. 26. 61.

palustris, W. (O. y. Ap. 2ℓ.) stem erect: leaves cordate, sub-orbicular, acute-crenate. 12—18 i.
integerrima, Ph. (E. y. M. 2ℓ.) stem erect, corymbed: leaves entire, with a closed sinus, orbicular-heart-form: floral leaves sessile, kidney-form, at the base obsoletely-crenate: petals obovate.
parnassifolia, R. (3) (fig cowslip. E. y. J. 2ℓ.) stem erect, 1-flowered, 1-leaf-

(1) heterophylla, Ph. (2) brevifolia, Ph. (3) ficaroides, Ph.

ed: radical leaves heart-ovate, very obtuse, few-toothed, many-nerved: petals elliptic. *S.*

flabellifolia, Ph. (tooth-leaf cowslip. E. y. J. 2f.) stem procumbent: leaves spread-reniform: lobes very spreading, acute and sharp-toothed all around: peduncles axillary, solitary, 1-flowered: petals obovate: capsule hook-beaked. Probably the *dentata* of Muhl.

Southern.

sagittata, Dc. (W. w.) scape 1-flowered: leaves ovate, obtuse, entire, heart-sagittate at the base, with inflexed auricles above: divisions of the nectary 9: pistils 13 to 15. Helleborus.

11—13. CALYCANTHUS. 35. 92.

laevigatus, W. (E. p. ♄.) segments of the calyx lanceolate: leaves oblong or oval, gradually acuminate, somewhat rugose, smooth and green on both sides: branches straight, erect. 4—6 f.

Southern.

floridus, W. (Carolina allspice. E. p. M. ♄.) divisions of the calyx lanceolate: leaves broad-oval, acute, tomentose beneath: branches spreading. Cultivated. 3—7 f.

inodorus, E. (E. Ap. ♄.) segments of the calyx linear-lanceolate, pubescent: leaves lanceolate, scabrous and shining on the upper, smooth on the lower, surface; branches spreading. 4—6 f.

glaucus, W. (E. J. ♄.) segments of the calyx lanceolate: leaves lanceolate, long-acuminate, glaucous beneath: branches spreading. 6—8 f. Tilia.

3—1. CALYMENIA. (1) 54. 32.

[The species of this genus are given under Allionia, excepting the following.]

decumbens, N. (Missouri. r. J.) stem round, decumbent: leaves entire, narrow, sessile: peduncles axillary.

21—2. CALYMPERES. 56. 4.

hobsoni, Greville. stem elongated: leaves linear, serrate, somewhat acute, with a distinct incrassated line below the margin, somewhat spreading, crisped when dry: calyptra smooth: capsule ovate-oblong. 1 i. Barbula.

18—1. CALYPSO. 7. 21.

americana, Br. (W. p.) lip narrowed, sub-unguiculate at the base: spur half 2-cleft, exceeding the lamina; divisions acute: peduncle longer than the germ.

borealis, Ph. (E. p-r. J. 2f.) radical leaf single, round-ovate, nerved: scape 1-flowered, sheathed. *S.* Epidendrum.

Calystegia, CONVOLVULUS.

14—1. CAMELINA. 39. 63.

sativa, P. (wild flax, mad-wort. y J. ☼.) silicle obovate, pyriform, margined, tipped with the pointed style: leaves sub-entire, lanceolate, sagittate. 18 i. Subularia.

5—1. CAMPANULA. 29. 52.

rotundifolia, W. (flax bell-flower, hair-bell. O. b. J. 2f.) glabrous: radical leaves heart-reniform, crenate; cauline ones linear, entire: panicle lax, few-flowered: flowers nodding. *S.*

(1) Allionia, Mx.

amplexicaulis, Mx. (1) (clasping bell-flower. O. b. J. ☼.) stem simple, erect; leaves heart-form, crenate, clasping: flowers axillary, sessile, glomerate. 12—18 i. *S.*

americana, W. (E. b. Au .2ℓ.) leaves ovate-lanceolate, long-acuminate; lower ones sub-cordate, with the petioles ciliate: flowers axillary, nearly sessile, in a terminal leafy raceme: corol sub-rotate: style exsert. Cultivated. 2 f.

acuminata, Mx. (O. b. Ju. 2ℓ.) smoothish, erect: leaves ovate-lanceolate, ending in a long acuminate point, sub-serrate: spike fascicular, many-flowered: corol somewhat wheel-form. 2—5 f. *S.*

erinoides, M. (2) (prickly bell-flower. O. w-b. J. ☼.) slender: stem simple, angular: angles and the margin and nerve of the leaves with reversed prickles: leaves linear-lanceolate, glabrous on the upper side: peduncles few; those on the top of the stem flexuose; axillary ones 1-flowered, filiform. 12 i.

nitida, W. (E? b. Ju. 2ℓ.) very glabrous: radical leaves oblong-spatulate, coriaceous, cartilaginous-crenate; cauline ones lance-oblong, sub-entire: flowers racemed: corol bell-wheel-form. 7 i.

uniflora, L. (W.) pubescent: radical leaves round-obovate; cauline ones lance-linear, somewhat toothed: stem about 1-flowered.

Southern.

divaricata, Mx. (E. b. Au. 2ℓ.) leaves lanceolate, acute, with large serratures, glabrous: panicle expanding: flowers nodding. 2 f. Lobelia.

4—1. CAMPHOROSMA. 12. 29.

Southern.

glabra, P. (L. 2ℓ.) leaves somewhat 3-sided, glabrous, unarmed. Hamamelis.

21—2. CAMPYLOPUS. 56. 4.

pulvinatus, stem ramose, fastigiate: leaves lanceolate, bearing hairs: capsule oval, nodding: lid subulate. On walls, stones, &c. Racomitrum.

1—1. CANNA. 8. 20.

Southern.

flaccida, Roscoe. (3) (E. y. J. 2ℓ.) interior limb of the corol 3-cleft; segments flaccid. 2—3 f.

angustifolia, W. (E. r. Au. 2ℓ.) leaves petioled, lanceolate, ribbed: interior limb of the corol 3-cleft; divisions straight, emarginate. Thalia.

20—5. CANNABIS. 53. 98.

Exotic.

sativa, W. (hemp. g. Au. ☼.) stem pilose: leaves petioled, digitate; leafets lanceolate, serrate, pilose: staminate flowers solitary, axillary; pistillate ones spiked. 4—10 f. Spinacea.

5—1. CANTUA. 29. 44.

Southern.

coronopifolia, W. (O. r. & y. Ju. ♂?) leaves pinnatifid: flowers terminal, peduncled, in loose racemes: corol thrice as long as the calyx. 2—3 f.

aggregata, Ph. (W. r. J. ♂.) pubescent: leaves slenderly pinnatifid: flowers terminal and lateral, somewhat in heads, sub-sessile: divisions of the corol narrow, oblong, gradually acute: style included, very short.

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(1) perfoliata, L. (2) aparanoides, Ph. flexuosa? Mx. (3) angustifolia, Wr.

parviflora, Ph. (W? b. J. ☼.) pubescent, diffuse: leaves pinnatifid; divisions long-linear: peduncles solitary, 1-flowered, terminal and opposite to the leaves: corol a little longer than the calyx.
longiflora, T. & J. (W.) very glabrous: leaves slenderly pinnatifid: flowers terminal, lax-corymb-panicled, peduncled: tube of the corol very long, tubular; divisions orbicular, slenderly acuminate: style exsert.
pungens, T. & J. (W.) leaves irritable, digitate, sub-fascicled; divisions subulate, pungent: divisions of the corol obovate, obtuse.

Physalis.

13—2. CAPRARIA. 40. 45.

Southern.

multifida, Mx. (W. g-w. Ju. ☼.) erect, viscid-hairy: upper leaves 3 in a whorl, many-cleft: pedicels solitary.
biflora, M. (E. 2f.) leaves alternate, ovate, serrate: flowers in pairs.
pusilla, T. & J. (W. w. ☼.) hairy: leaves opposite, cordate, repand-toothed, petioled: peduncles axillary, longer than the petioles. Seymeria.

Caprifolium, LONICERA.

Capsella, THLASPI.

5—1. CAPSICUM. 20. 41.

Exotic.

annuum, (guinea pepper, red pepper, cayenne pepper. y-g. w. Au. ☼.) stem herbaceous: peduncles solitary. From South America. 10—18 i.

Androcera.

14—2. CARDAMINE. 39. 63.

bellidifolia, L. (W. 2f.) leaves simple, round-ovate, entire: petioles very long: flower-bearing stem of the length of the leaves.
rotundifolia, Mx. (1) (A. w. Ju. 2f.) leaves sub-orbicular, nearly entire, smooth, petiolate: stem simple, weak procumbent. *S.*
articulata, Ph. (W. 2f.) stem naked: leaves radical, lanceolate, gash-toothed, glabrous: siliques thick, somewhat jointed.
teres, Mx. (E. w. J. 2f.) small, erect, ramose: leaves all sub-lyrate-pinnatifid: silique short, terete, acuminate.
pensylvanica, W. (American water-cress. O. w. M. 2f.) glabrous, branching: leaves pinnate: leafets roundish-oblong, obtuse, tooth-angled: silique narrow, erect. *S.*
pratensis, W. (O. r-p. M. 2f.) simple, glabrous, erect: leaves pinnate; radical leafets roundish, toothed; cauline ones lanceolate, sub-entire: racemes sub-corymbed.
virginica, W. (w. M. 2f.) glabrous, erect: leaves pinnate; leafets lanceolate, sub-auricled: silique long, straight, erect. 5—8 i. *S.*
hirsuta, (E. M. ☼.) leaves pinnate, hairy; leafets of the radical ones roundish, petiolate; those of the upper ones oblong, sub-sessile: petals oblong: siliques erect.

Southern.

spathulata, Mx. (E. w. Ap. ☼?) small: stems decumbent: root leaves spatulate, pubescent; cauline ones narrow, cuneate, entire, toothed: pods loosely divaricate. 6—12 i.
uniflora, Mx. (W.) stemless, small: leaves obtusely lyrate-pinnatifid: peduncles radical, 1-flowered.

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(1) Arabis rhomboidea, P.?

multifida, Ph. (E. 2f.) hairy, branching: leaves interruptedly pinnate; leaflets 2-pinnatifid, with roundish gashed divisions: siliques short.
Arabis.

8—3. CARDIOSPERMUM. 23. 65.

Southern.

halicacabum, W. (O. Au. ☼.) glabrous: leafets incised and lobed; the terminal one rhomboidal. Sapindus.

17—1. CARDUUS. 49. 54.

pectinatus, W. (E. p. ♂.) unarmed: leaves decurrent, lanceolate, pectinately pinnatifid: peduncles almost leafless, terminal, very long, about 1-flowered: flowers nodding, often discharging the pollen: scales of the calyx linear-spreading.

19—3. CAREX. 3. 9.

Remarks. The Monograph of North American species of Carex by Schweinitz, edited by Torrey, is a work of very great merit; such as was to be expected from these gentlemen. But Prof. Dewey has made the Carex a subject of study for eleven years; and appears to me to have brought this very difficult genus down to the capacities of those learners for whom this Manual was compiled. I shall therefore adopt his Caricography, as published in the 7th, 8th, 9th, 10th, 11th, 12th and 14th vols. of Silliman's Journal, with a few trivial alterations.

I. STIGMAS TWO.

A. *Spike dioecious.*

wormskioldiana,* Hor. (mountain sedge. A. J. 2f.) spike single, simple: leaves flat: fruit-bearing spike sometimes with 3 stigmas, oblong, acute, cylindric, densely imbricate: fruit ovate and sub-ovate, short beaked, hairy, equalling the ovate acute scale. White Mt. Oakes. 5 i. Probably the *dioica*. *S.*

B. *Spikes dioecious and androgynous.*

exilis, Dewey, (E. M. 2f.) spike single, slender: leaves 3-sided, bristly: fruit-bearing spikes staminate below, somewhat dense-flowered, simple: fruit, lance-ovate, convex both sides, diverging, serrulate or scabrous at the margin; scale a little longer than the fruit, ovate, acute. 16 i. Wet. Var. *squamacea*, has the spike androgynous and longer, and numerous staminate flowers.

sterilis, W. (barren sedge. O. M. 2f.) spikelets in fives, sessile, approximate: fruit ovate, acuminate or somewhat beaked, 2-cleft, 3-sided-compressed, scabrous at the margin; equalling the ovate acutish scale. 8 i. Wet. *S.*

bromoides, Sh. (O. M. 2f.) spikelets many, alternate, oblong, erect, the uppermost staminate below, the others pistillate, androgynous above and below, and staminate in the middle, or the middle ones staminate below: fruit erect, lanceolate, acuminate, scabrous, nerved, bifid, half as long as the lance-ovate scale. 14 i. Wet. *S.*

C. *Spikes androgynous.*

1. *Stamens at the summit of the spikelets.*

cephalophora, W. (E. M. 2f.) spikelets ovate, densely aggregated, somewhat

* For synonyms, see Silliman's Journal, and the Annals of N. Y. Lyceum.

in fives, bracted: fruit ovate, acuminate, compressed, bifid, margin scabrous, nearly equalling the small scabrous-cuspidate scales. 20 i. Woods. *S.*

rosea, Sh. (O. M. 2f. spikelets somewhat in fours, alternate, remotish, sessile, lower one with a long setaceous bract: fruit lance-oblong, convex above, margin scabrous, 2-toothed, diverging, about twice as long as the ovate obtuse scale. 12 i. Moist. Var. *radiata*, has its spikelets distant, about 3-flowered, with little setaceous bracts, and very narrow leaves. 6 i. *S.*

retraflexa, M. (O. M. 2f.) spikelets about in fours, alternate, ovate, sub-approximate, sessile, bracted: fruit ovate, acutish, 2-toothed, margin glabrous or scabrous, reflex-spreading, about equal to the ovate acute scale. 1 f. Woods. *S.*

muhlenbergii, Sh. (E. 2f.) spikelets alternate, somewhat in fives, obtuse, approximate, staminate above: fruit ovate, compressed, nerved, 2-cleft, margin scabrous, sub-divergent, a little shorter than the ovate scale. 15 i. Mountain woods. *S.*

stipata, M. (O. M. 2f.) spike decompound; spikelets numerous, oblong, aggregated, bracted: fruit lance-ovate, terete at the base, plano-convex, scabrous at the margin, nerved, bifid, diverging, about twice as long as the lance-ovate scale. 2 f. Wet. *S.*

multiflora, M. (E. M. 2f.) spikes alternate, approximate, bracted, sessile; spikelets oblong-ovate, obtuse, bracted, conglomerate: fruit ovate, acuminate, compressed, densely imbricate, bifid, 3-nerved, diverging, a little smaller than the ovate-cuspidate scale. 20 i. Moist. Var. *microsperma*, has the fruit but little compressed or acuminate, and very small. *S.*

sparganoides, M. (E. M. 2f.) spikelets somewhat in eights, ovate, somewhat distant, bracted: fruit ovate, compressed, scabrous at the margin, diverging, acuminate, 2-toothed, twice as large as the ovate mucronate scale. 20 i. *S.*

disperma, Dewey. (O. M. 2f.) spikelets somewhat in threes, sub-approximate, erect, lower one bracted: fruit ovate, obtuse, nerved, plano-convex, glabrous, twice as long as the ovate acute, sub-mucronate scale. 10 i. Wet woods and mountains, near Williams college.

setacea, Dewey. (E. J. 2f.) spikes sessile, alternate, approximate, bracted; spikelets ovate, obtuse, conglomerated, bracted: fruit lance-ovate, acuminate, compressed, bifid, somewhat diverging, about equal to the lance-ovate awned scale. 2 f. High wet ground.

paniculata, (O. M. 2f.) spikelets sometimes dioecious, fuscous, ovate, condensed into a panicle: fruit lance-ovate, acuminate, gibbous, nerved, 2-toothed, ciliate-serrate at the margin, glabrous at the base, a little shorter than the ovate, acute, acuminate scale. 2 f. Damp.

teretiuscula, Gn. (E. 2f.) spike twice or thrice compound, dense, somewhat pointed; spikelets clustered: fruit spreading, gibbous: stem roundish. Sometimes dioecious or polygamous. Wet.

muricata, (E. M. 2f.) spikes compound; spikelets somewhat in sixes, ovate, sessile, approximate; often the lower ones are remotish: fruit ovate or oblong-ovate, acuminate, plano-convex, diverging, bifid, scabrous at the margin, twice as long as an ovate scale, or equal to a lance-ovate one. 1 f. Woods, fences, &c. Var. *cephaloidea*, Dewey, has spikelets aggregated, somewhat in fives, closely sessile: fruit ovate, twice as long as the scale.

2. *Stamens at the base of the spikelets.*

bicolor, Al. (E. 2f.) spikes in threes, ovate, sub-sessile, erect: fruit obovate, obtuse, sub-compressed: scales ovate, obtuse. 6 i. Labrador.

loliacea, (E. 2f.) spikelets in threes, rather distant, minute, few-flowered, sessile: fruit oval or ovate, obtuse, sub-compressed, spreading, nerved, entire at the orifice, about twice as long as the acute, ovate scale. *S.*

deweyi, Sz. (E. J. 2f.) spikelets somewhat in threes, sessile, ovate, alternate, somewhat distant, the upper one without bracts: fruit lance-oblong, beaked, acuminate, 2-forked, plano-convex, sub-scabrous at the margin, a little long-

er than the lance-oblong, hyaline, short-awned, scale. 3 f. Slender and often procumbent. Rocky woods.

trisperma, Dewey. (E. J. 2f.) spikelets in threes, alternate, remote, sessile, ovate; upper one without bracts: fruit oblong, acute or beaked, plano-convex, entire at the orifice, many-nerved, sub-scabrous at the apex, somewhat spreading, longer than the oblong, acute, hyaline, scale. 20 i. Wet.

scoporia, Sh. (E. M. 2f.) spikelets alternate, ovate, sessile, in fives; lower one with caducous bracts: capsule lanceolate, nerved, glabrous, erect, longer than the lanceolate acuminate scale. 20 i. Wet. Spikelets tawney. *S.*

lagopodioides, Sh. (E. M. 2f.) spikelets crowded, numerous, scales smallish: capsules oval-oblong, flattish-convex, acuminate, spreading, membrane-margined; orifice 2-toothed. 2 f. Wet. *S.*

straminea, W. (E. M. 2f.) spike compound; spikelets somewhat in sixes, ovate, oblong, alternate, sessile, sub-approximate: fruit broad-ovate, roundish, compressed, winged, ciliate-serrate, beaked, nerved, 2-toothed, a little longer than the lance-ovate scale. 18 i. Moist. Var. *brevior*, Dewey, fruit short-ovate and beaked, scarcely longer than the scale. Var. *minor*, Dewey, spikelets obovate, and fruit with serrulate wings, small.

foena, M. (Pennsylvania. 2f.) spike compound; spikelets ovate, aggregated above: fruit ovate, acuminate, scabrous margined, 2-toothed, about equal to the lance-oblong scale. 2 f. Wet. *S.*

cristata, Sz. (J. 2f.) spikelets sessile, 6 to 14, closely aggregated, globose, bracted: fruit oblong-ovate, compressed, diverging, winged, beaked, acuminate, bifid, concavo-convex, ciliate-serrate at the margin, longer than the lance-oblong scale. 2 f. Moist.

stellulata, Sr. (E. M. 2f.) spikelets about in fours, ovatish, somewhat remote, sessile: fruit ovate, acuminate, compressed, sub-bifid, scabrous at the margin, diverging and reflexed, a little longer than the ovate obtusish scale. 10 i. Wet.

scirpoides, Sh. (E. M. 2f.) spikelets in fours, sessile, ovate, obtuse, lower one bracted: fruit ovate, cordate, compressed, beaked, scabrous at the margin, longer than the ovate, acute scale. 10 i. Wet. Often very small. *S.*

curta, Gn. (O. M. 2f.) spikelets in fives, sub-approximate: scales sub-equal: fruit round-ovate, acutish, somewhat convex and obtuse-angled; orifice 2-toothed. 20 i. Wet woods. Probably includes the *canescens*.

festucacea, Sh. (E. M. 2f.) spikelets sessile, alternate, ovate, approximate, 5 to 8-bracted: capsules roundish-ovate, beaked, winged, striate, 2-toothed, ciliate-serrate at the margin, larger than the lance-ovate, mucronate scale. 2 f. Moist. *S.*

tenera, Dewey. (E. M. 2f.) spikes about in fives, obovate, remotish, alternate, sessile, slender below; the lowest bracted: fruit ovate, compressed, beaked, subulate, nerved, ciliate-serrate, larger than the lance-oblong scale. 2 f. Moist.

3. *Stamens at the apex of the highest and lowest spikelets—the middle spikelets wholly staminate.*

siccata, Dewey. (J. 2f.) spikes compound; terminal spikelets obtuse; lower ones mostly in fours, ovate, acutish: fruit lance-ovate, acuminate, compressed, scabrous at the margin, bifid, nerved, about equal to the lance-ovate scale. 15 i. Sand.

D. *Stamens and stigmas on separate spikes.*

1. *Staminate spikes single.*

novae angliae, Sz. (A. J. 2f.) staminate spike short, slender, arising from the same base with the upper fruit-bearing one; pistillate spikes 2 or 3, somewhat remote, sessile, ovate, alternate, few-flowered, bracted: fruit some-

what 3-sided-oval, sub-ventricose, ribbed, beaked, minutely pubescent, a little longer than the ovate, mucronate scale. 7 i. On Saddle Mt. 3000 feet high.

aurea, N. (E. M. 2f.) staminate spike short, peduncled, without bracts; pistillate spikes in threes, oblong, lax-flowered, sub-peduncled; spikelets exsertly peduncled, sub-approximate, bracted: fruit obovate or pear-form, obtuse, nerved, sub-ventricose, entire at the orifice, longer than the ovate, acute or short-mucronate scale. 6 i. Wet. This is Schweinitz's *pyriformis*. Dewey.

saxatilis, (A. Vermont. 2f.) spikes oblong, erect; scales obtuse; pistillate spikes about in threes, alternate, upper ones ovate, sessile, lower ones sub-oblong, short-peduncled, bracted: fruit ovate-obtuse or oblong-oval, sub-compressed, orifice entire, sub-pubescent, about equalling the ovate obtuse scale. This includes the *bigelowii* and *compacta*.

2. *Staminate spikes two or more.*

acuta, (E. M. 2f.) staminate spikes numerous or one oblong erect—upper one peduncled, and the rest sessile and short; pistillate spikes somewhat in threes, oblong, cylindric, often recurved, sessile, the lower one peduncled, often staminate at the apex, lax- or dense-flowered: fruit oval, compressed, acutish, glabrous with the aperture entire and protruded, a little shorter than the lance-oblong scale. 2 f. Var. *eruta*, Dewey, pistillate spikes two, erect, sessile, straight, short-cylindric. Var. *sparsiflora*, Dewey, pistillate spikes oblong, sub-sessile, lax, flowers scattered. *S.*

cespitosa, (O. M. 2f.) staminate spikes sometimes solitary, erect, oblong; lower ones sessile; pistillate spikes in threes, oblong-cylindric, somewhat dense-flowered, sessile, often staminate at the apex: fruit oval and obovate, convex both sides, obtuse, glabrous, with the orifice entire and protruded, a little longer than the oblong obtuse scale. 18 i. Var. *ramosa*, one, two, or three spikes branch off from the lower spike. *S.*

aquatilis, Wh. (M. 2f.) staminate spikes numerous, or one, erect; pistillate spikes short-peduncled, cylindric, about in threes, thick-clavate above, dense-flowered, sub-erect, sometimes staminate at the apex: fruit oval and sub-lens-form, glabrous, with the aperture entire and protruded, about equal to the ovate acutish scale. 2 f. Wet.

stricta, Gn. (E. M. 2f.) staminate spikes somewhat in pairs, erect, oblong, about 3-sided; pistillate spikes about in threes, cylindric, erect, often staminate at the apex, acutish above, the lower one short-peduncled: fruit ovate, compressed, acutish, glabrous, with a protruded entire orifice, a little longer than the oblong acute scale. 15 i. Wet. Resembles *acuta*.

crinita, Lk. (O. M. 2f.) staminate spikes two (sometimes one) lax, often with scattered fruit; pistillate spikes rarely with three stigmas, somewhat in threes, oblong-cylindric, peduncled, nodding, tapering below, often staminate above: fruit ovate, sub-inflated, somewhat 3-sided, shortly beaked, glabrous, with the orifice entire, about one third as long as the oblong linear, scabrous-awned scale. Var. *paleacea*, pistillate spikes mostly in fours, flagelliform, recurved; scales cuspidate. Var. *gynandra*, pistillate spikes pendulous; fruit about half as long as the scale. *S.*

II. STIGMAS THREE.

E. *Spikes androgynous.*

1. *Stamens at the summit.*

(Spike single.)

polytrichoides, M. (O. M. 2f.) spike terminal, oblong: fruit somewhat in fives, oblong, alternate, somewhat 3-sided, glabrous, emarginate, twice as long as the ovate obtuse (rarely mucronate) scale. 10 i. Wet.

leucoglochin, Eh. (E. J. 2f.) spike about 4-flowered ; staminate flower mostly solitary : fruit lanceolate, 3-sided-terete, much reflexed, hardly twice as long as the lance-oblong scale. 6 i. Wet.

fraseri, Sims. (A. 2f.) spike cylindric : fruit globe-ovate-triangular, entire at the orifice, striate, longer than the oblong scale. 1 f.

(Spikes several.)

ovata, Rudge. (Canada.) spikes in fours and fives, ovate, dense-flowered, peduncled, pendulous, bracted : fruit ovate, compressed, acuminate, bifid, equal to the ovate acute scale.

(One radical peduncle, or more, single-spiked.)

wildenowii, Sh. (J. 2f.) stems 1 to 3 from the same root : one spike staminiferous above, ovate at the base : fruit 3 to 6, globe-ovate, beaked, sub-inflated, somewhat 3-sided : scales ovate, acute, inferior filiform, very long, much longer than the spike—sometimes the staminiferous spike is distinct. 10 i. Dry woods. *S.*

pedunculata, M. (O. Ap. 2f.) spikes about in fives, 3-cornered, distant, long-peduncled : fruit obovate, 3-sided, recurved at the apex, commonly glabrous, a little longer than the oblong or obovate, mucronate scale. 6 i. Woods.

2. *Stamens at the base of the spikes.*

squarrosa, (E. 2f.) spikes one, two, or three, oblong-cylindric : fruit imbricate, ovate with a long beak, 2-toothed, spreading horizontally, glabrous and subsquarrose, longer than the lanceolate scale. Var. *typhinoides*, (Dewey) spike long-cylindric, tapering above, mostly in pairs, often approximate. *S.*

atrata, (A. 2f.) spikes somewhat in fours, oblong-ovate, somewhat nodding, terminal one androgynous, staminate below ; upper ones crowded, sessile ; lower ones somewhat distant, peduncled, round-oval, compressed, glabrous, short-beaked, with a 2-lipped aperture, a little shorter than the oblong, acutish, black scale. 1 f. *S.*

F. *Terminal spike androgynous, pistillate at the summit : the others wholly pistillate.*

virescens, M. (E. M. 2f.) spikes in threes, oblong, erect, alternate ; upper one peduncled, beneath staminiferous ; the rest bearing fruit, sub-sessile, bracted : fruit ovate, obtuse, ribbed, pubescent, nearly equal or exceeding the ovate, pubescent, mucronate scale. 20 i. Wet—upland. Var. *costata*, has its fruit strongly ribbed, and its outer sheaths purplish-brown—leaves more numerous and larger.

hirsuta, W. (E. M. 2f.) spikes in threes, oblong, alternate, erect ; upper one short-peduncled and staminiferous below ; the rest sub-sessile, leafy-bracted ; all approximate, dense-flowered : fruit 3-sided-ovate, nerved, obtuse, entire at the aperture, about equal to the ovate, acuminate, glabrous scales. Var. *pedunculata*, T. has oblong-cylindric, peduncled spikes, and slightly pubescent leaves. *S.*

buxbaumii, Wh. (J. 2f.) spikes distinct, or hydrogynous, about in fours ; upper spike staminiferous, often androgynous, peduncled, clavate, fruit-bearing above ; the rest fruit-bearing, oblong, somewhat remote, sessile, bracted, sometimes with but 2 stigmas : fruit oblong-ovate and obovate, obtuse, somewhat 3-sided, nerved, glabrous at the sub-entire orifice, equalling the oblong, mucronate scale. 18 i. Wet. *S.*

viridula, Mx. (1) (Hudson's bay. 2f.) spikes about in threes, oval, sessile, approximate ; terminal one androgynous, staminiferous below ; lower ones axillary : fruit ovate, 3-sided, glabrous, acuminate, about equalling the ovate acuminate scale. 1 f. Damp.

formosa, Dewey, (E. M. 2f.) spikes oblong, thick, one-sided, in fours, distant, exsertly peduncled, nodding ; upper one staminate below : fruit oblong, 3-

(1) triceps, E.

sided, sub-inflated, acutish at both ends, with a sub-entire or 2-lobed orifice, twice as large as the ovate, acute scale. Yellowish green. 15 i. Wet.

gracillima, Sz. (1) (E. M. 2f.) spikes long, slender, distant, lax-flowered, in fours, exsertly peduncled; upper one staminate below; all bracted: fruit oblong, 3-sided, obtuse, with an oblique somewhat 2-lobed orifice, larger than the oblong, obtuse, short-awned scale. 20 i. Moist.

torreyana, Dewey not Sz. (2) (M. 2f.) fructiferous spikes somewhat in threes, oblong, with scattered flowers, remote, exsertly peduncled, sub-pendulous: fruit oblong, somewhat tapering at the base and 3-sided-inflated, nerved, acutish, short-beaked, with a 2-lobed orifice, about equal to the oblong, scabrous-awned scale. 18 i.

fuliginosa, Sh. (A. 2f.) spikes oblong, somewhat in fours; terminal one androgynous, staminate below; lower ones exsertly peduncled, nodding: fruit oblong, mucronate, bifid at the apex, longer than the oblong scale.

G. *Staminate spike single.*

1. *Pistillate spikes sessile, or with enclosed peduncles.*

pubescens, M. (E. M. 2f.) spikes distinct; staminate spike 3-sided, sub-sessile; pistillate spikes in threes, oblong, sub-lax-flowered, erect, bracted, lower one peduncled: fruit ovate-3-sided, beaked, with a sub-entire orifice, pubescent, a little larger than the ovate-oblong, mucronate, keeled scale: leaves and culm pubescent. 18 i. Moist.

vestita, W. (E. M. 2f.) staminate spike is sometimes accompanied with a smaller one, cylindric-oblong, upper one elongated, peduncled; pistillate spikes in pairs, ovate-oblong, sessile, sub-approximate, bracted, sometimes staminate above: fruit ovate, oblong, somewhat 3-sided, nerved, short beaked, bifid, pubescent, a little longer than the ovate-oblong, acutish, sub-mucronate scale. 2 f. Wet. *S.*

varia, M. (O. Ap. 2f.) staminate spike erect, short or long; pistillate spikes in threes, ovate, sessile, sub-approximate, few-flowered: fruit oval-inflated or globe-3-sided, acuminate-beaked, bifid, rough-pubescent, about equal to the ovate, acuminate scales. 10 i. Dry woods. Var. *pedicellata*, (Dewey,) has the pistillate spikes short-peduncled, erect, and the lower bract leafy. Numerous variations in height, &c. are common to this plant. *S.*

marginata, M. (E. Ap. 2f.) staminate spike erect, peduncled, somewhat 3-sided; pistillate spikes in pairs, ovate, sub-sessile, sub-approximate, few-flowered: fruit globe-ovate, short-beaked, somewhat 2-toothed, tomentose, about equalling the ovate-acuminate, or oblong-mucronate, scales. 15 i. Dry woods. *S.*

flava, (E. M. 2f.) spikes distinct; staminate spike somewhat 3-sided, from the same base with pistillate, and short-peduncled; pistillate spikes in threes, ovate-oblong, approximate, peduncles inclosed: fruit ovate, densely imbricate, 2-toothed, ribbed, reflexed with a curved beak, larger than the lance-ovate scale. 18 i. Wet upland.

oedere, Eh. (M. 2f.) spikes distinct, or androgynous, or both; staminate spike erect; pistillate spikes about in fours, aggregated, sub-sessile, bracted, somewhat oblong; upper androgynous spike staminate above or below, or both: fruit sub-ovate-inflated, nerved, 2-toothed, with a subulate straitish beak, a little longer than the ovate scale. 8 i. Wet.

tentaculata, M. (O. M. 2f.) spikes distinct; staminate spike sub-sessile, bracted; pistillate spikes in pairs or in threes, oblong, cylindrical, bracted; upper one sessile, the rest with short inclosed peduncles: fruit ovate, inflated, long-beaked, 2-toothed, nerved, glabrous, diverging, closely compressed, twice as long as the small, ovate, rough-mucronate scale. 18 i. Wet, often forming bogs. *S.*

collinsii, N. (A. M. 2f.) spikes distinct; staminate spike erect; pistillate spikes somewhat in threes, sessile or with inclosed peduncles, distant, few-flowered: fruit subulate or somewhat inflated-lanceolate, long, beaked, reflex-spread-

(1) digitalis, T. & Sz. (2) davisii, T.

ing, glabrous with an entire orifice, more than thrice as long as the lanceolate scale. 1 f. This is Dewey's *michauxii*, which he yields to Nuttall, and adopts his name. It is the *subulata* of Mx. not of Muhlenberg. *S.*

folliculata, (O. M. 2f.) spikes distinct; staminate spike oblong, peduncled; pistillate spikes somewhat in pairs, approximate, few-flowered, erect, sub-peduncled; the lower one sometimes remotely and exsertly peduncled: fruit conic-ovate, acuminate, beaked, 2-toothed, large, very glabrous, nerved, inflated, diverging, thrice as long as the ovate-cuspidate scale. 20 i. Wet. *S.*

xanthophysa, Wh. (E. M. 2f.) spikes distinct; pistillate spikes thick, about in threes, distant, lax-flowered, ovate, peduncled, inclosed or exsert, leaf-bracted: fruit oblong, inflated, large, beaked, diverging, 2-forked at the orifice, longer than the lance-ovate, sub-awned scale. 2 to 5 f. Elevated wet ground. Var. *nana*, (Dewey.) has pistillate spikes in pairs, sub-approximate, and the fruit twice as long as the scale. 1 f. Var. *minor*, is like the last, but is still smaller, and has the pistillate spikes aggregated.

lupulina, M. (O. M. 2f.) staminate spike erect, slender, sub-sessile; pistillate spikes in threes and fours, ovate-oblong, very thick, or oblong-cylindric, short-peduncled, erect, dense-flowered, approximate; lower one exsertly peduncled and sometimes distant: fruit ovate-conic, inflated, long and conically beaked, bicuspidate, nerved, glabrous, about thrice as long as the lance-ovate, acuminate scale. 3 f. Wet. Var. *polystachia*, T. has the pistillate spikes in fives, long-cylindric; lower one remote and long-peduncled. *S.*

davisii, Dewey. (M. 2f.) spikes distinct; staminate spike sessile, short; pistillate spikes in pairs or in threes, approximating the staminate, ovate, sessile, few-flowered; often a radical one long peduncled: fruit globe-3-sided, tapering at the base, beaked, pubescent, with an oblique aperture, about equalling the ovate scale: culm decumbent. 8 i. Dry hills and woods.

nigro-marginata, Sz. (M. 2f.) spikes distinct; staminate spike sessile; pistillate spikes in pairs, ovate, sessile, closely approximating the staminate; culms (or peduncles) radical, long, somewhat in threes, arising from the same root: fruit ovate, somewhat 3-sided, conic-beaked, 2-toothed, pubescent, equalling the ovate acutish scale. 6 i. Hills. Scales dark brown, with green keels.

collecta, Dewey. (A. M. 2f.) staminate spike erect, lax-imbricate, slender, sub-peduncled; pistillate spikes somewhat in threes, ovate, few-flowered, bracted; lower one short-peduncled: fruit ovate, beaked, somewhat 2-toothed and pubescent, a little longer than the ovate, acute scale. 15 i. In small bogs in mountain swamps.

2. *Pistillate spikes exsertly peduncled.*

plantaginea, Lk. (O. Ap. 2f.) staminate spike erect, peduncled; pistillate spikes somewhat in fours, oblong, with flowers somewhat scattered, erect, remote, exsertly peduncled: fruit oblong, oval-3-sided, sub-cuneiform, tapering at both ends, curved back at the apex, entire at the orifice, longer than the ovate-cuspidate scale: leaves very broad, ensiform. 18 i. Stem 3-sided; sheathes reddish-brown towards the base: leaves radical, green through the winter. Often mistaken for the next species. *S.*

anceps, Sh. (O. M. 2f.) spikes distinct; staminate spikes oblong, short-peduncled; pistillate spikes somewhat in threes, sub-filiform, erect, alternate, with scattered flowers: peduncle 2-edged; upper spike sessile, and the rest somewhat remotely and exsertly peduncled: fruit oval-inflated, elongated at the base, tapering at the apex, alternate, somewhat 3-sided, glabrous, striate, curved back at the membranaceous or entire orifice, a little longer than the oblong, mucronate or ovate, acute, scale. 1 f. Stem acutely triangular and often 2-edged above. Woods. *S.*

alba, Haenke. (2f.) staminate spike peduncled; pistillate ones in pairs, about 5-flowered: bracts sheathing, membranaceous, hyaline: fruit globe-obovate, striate, beaked, obliquely truncate. 10 i. Var. *setifolia*, (Dewey.) has bristle-form, slender, somewhat stiffly-erect leaves, till near maturity. Rocky soil. Pownal Vt. and Goat Island at Niagara Falls.

oligocarpa, Sh. (E. M. 2f.) spikes distinct; staminate spike without bracts; pistillate spikes in threes, somewhat 5-flowered, oblong, distant, peduncles long and lax: fruit ovate-3-sided, alternate, glabrous, nerved, curved back and short-beaked at the apex, entire at the orifice, a little longer than the ovate scale. 1 f. Woods and hills. Var. *van-vleckii*, Sz. has the spikes longer, peduncles shorter, fruit more remote and smaller, with scales half as long.

conoidea, Sh. (1) (E. M. 2f.) spikes distinct; staminate spike oblong, peduncled; pistillate spikes in pairs or in threes, oblong, remote, erect, sub-dense-flowered, bracted; upper one sub-sessile: fruit oblong, obtusish, glabrous, nerved, somewhat diverging with an entire orifice, a little longer than the ovate subulate scale. Dewey says, this is the granularoides of Sz. 1 f. Moist. *S.*

granularis, M. (M. 2f.) staminate spike erect, sub-peduncled; pistillate spikes somewhat in threes, cylindric, dense-flowered; upper ones sub-sessile, often approximate; lower ones exsertly peduncled: fruit round-ovate, recurved at the apex and short-beaked, entire, nerved, hardly twice as long as the ovate, acuminate scale. 1 f. Wet upland. *S.*

scabrata, Sz. (E. M. 2f.) spikes distinct; staminate spike 3-sided, peduncled; pistillate spikes somewhat in fives and remote, exsertly peduncled, cylindric, alternate, sub-erect, furnished with long leafy bracts: fruit oblong-ovate, beaked, sub-ventricose and bifid, scabrous, longer than the scale: scale lance-ovate, acuminate, sub-ciliate at the margin, and scabrous at the apex. 18 i. Wet.

blanda, Dewey. (2) (M. 2f.) spikes distinct; staminate spike erect, peduncled, 3-sided; pistillate spikes somewhat in threes, oblong, cylindric, with flowers scattered, alternate, bracted; upper one sub-sessile; lower one with a long 2-edged peduncle: fruit oval or obovate, somewhat 3-sided, nerved, recurved and entire at the apex, scarcely longer than the ovate, scabrous-mucronate scale. 1 f. Dry woods.

laxiflora, Lk. (E. M. 2f.) spikes distinct; staminate spikes oblong, slender, rarely bracted; pistillate spikes in threes, lax-flowered, remote, erect; upper one with a short and inclosed peduncle; lower one exsertly peduncled: fruit ovate or oblong-ovate, sub-obtuse, glabrous, ventricose, nerved, somewhat 3-sided, with an entire orifice, a little longer than the ovate-mucronate and scabrous scale. 15 i. Damp woods and meadows. *S.*

ustulata, Wh. (A. 2f.) staminate spike oblong, recurved; pistillate spikes in pairs, oval, nodding: fruit ovate, beaked, acuminate, flattish both sides, black, 2-toothed at the orifice, about twice as long as the ovate scale. Labrador.

flexuosa, Sh. (E. M. 2f.) spikes distinct; staminate spike filiform; pistillate spikes in fours, filiform, flexuose, nodding; flowers scattered; peduncles long: fruit lance-oblong, somewhat 3-sided, alternate, glabrous, beaked, bifid, hardly twice as long as the lance-ovate scale. 18 i. Moist woods and meadows. *S.*

sylvatica, Hd. (M. 2f.) spikes distinct; staminate spike slender, short-peduncled; pistillate spikes somewhat in fours, filiform, with scattered flowers, remote, nodding, long-peduncled: fruit ovate, 3-sided, glabrous, sub-ventricose, somewhat long-beaked, bifid, scarcely exceeding the ovate, mucronate, membranaceous scale. 15 i. Moist woods and meadows.

digitalis, M. (E. M. 2f.) spikes distinct; pistillate sipkes in threes, alternate, lax-flowered, with long filiform, nodding peduncles: fruit oval-3-sided, obtuse, nerved, glabrous, longer than the ovate, acute scale. 6 i. Wet. *S.*

castanea, Wh. (doubtful as an American,) spikes staminate and pistillate, distinct; pistillate spikes thickish, short, sub-dense-flowered; peduncles long-exsert, recurved, bracted, lax-sheathed, leafy, distant: scales short: fruit oblong, slender, divergent, with a 1-lobed orifice: leaves hirsute.

washingtonia,* Dewey. (3) (A. J. 2f.) spikes distinct; staminate spike erect;

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* Prof. Dewey will excuse me for shortening some of his personal and geographical names by substituting genitives. In this case, I believe, the adjective may be properly made Washingtonius, &c.

(1) granularoides, Sz. (2) conoidea, M. (3) nigra, Sz.

pistillate spikes oblong, cylindric, sub-sessile, sub-remote, erect; flowers somewhat scattered: fruit oval, acute at both ends, compressed, short-beaked, glabrous, with one entire orifice, about equalling the oblong-ovate, acutish scale. 1 f. Damp. Found on the White Mts. N. H. near the summit of Mt. Washington, by Prof. Barratt.

balseyi, Dewey. (E. M. 2f.) staminate spike remote from the pistillate, accompanied with one or two smaller, arising near its base; pistillate spike solitary, (rarely another with stamens at its top, interposed between it and the staminate one) oblong, cylindric, erect, sub-lax-flowered: fruit oval-ovate, short-beaked, somewhat 3-sided, inflated, nerved, glabrous, oblique at the orifice, a little longer than the ovate, acutish scale. 18 i. Wet upland.

tetanica, Sh. (E. M. 2f.) staminate spike peduncled; pistillate spikes in pairs or in threes, remote; lower one long-peduncled: fruit obovate, recurved at the apex, entire at the orifice, longer than the ovate, obtuse scale. 10 i. Moist meadows. Dewey says, some mistake must have been made about this species; but it must remain as it is for farther examination. *S.*

3. *Pistillate spikes peduncled and scarcely sheathed.*

miliacea, M. (E. M. 2f.) spikes distinct; staminate spike elongated, slender; pistillate spikes in threes, elongated, cylindric, somewhat slender; upper one sub-sessile, the rest peduncled, all bracted, and nodding: fruit ovate-3-sided, glabrous, somewhat beaked, sub-bifid or entire at the orifice, longer than the oblong, emarginate or obcordate, scabrous-awned scale. Wet. *S.*

umbellata, Sh. (O. M. 2f.) spikes distinct; staminate spike short, with a long peduncle; pistillate spikes somewhat in fours, one often sub-sessile and near the staminate, the rest sub-radical, exsertly peduncled, all ovate and sub-umbelled: fruit ovate, acute at both ends, beaked, shortly 2-toothed, pubescent, equalling the lance-ovate scale. 1 to 4 i. In small tufts on dry hills. Var. *vicina*, (Dewey.) has one sessile, ovate, pistillate spike at the base of the staminate, with two or three radical peduncles, each bearing a pistillate spike, as in the common one.

miliaris, Mx. (A. 2f.) spikes distinct; staminate spike pallid, long-peduncled; pistillate spike sessile, oval, fuscous: bracts setaceous, short: fruit sub-spherical, smooth. Canada marshes.

pallescens, (2f.) spikes peduncled, sub-cylindric, nodding: bracts somewhat clasping, leafy and distant: fruit oval, very obtuse, terete. Culm erect. 1 f. Staminate spike lanceolate, pistillate ones in threes.

okesii, Dewey. (A. J. 2f.) spikes distinct; staminate spike short-bracted, oblong, slender; pistillate spikes somewhat in pairs, ovate, distant, bracted; lower one sub-peduncled: fruit ovate, somewhat 3-sided, sub-inflated, nerved, short-beaked, glabrous, entire at the orifice, a little longer than the lance-ovate scale. 1 f.

hystericina, W. (O. M. 2f.) spikes distinct; staminate spike 3-sided, bracted, peduncled; pistillate spikes somewhat in threes, alternate, somewhat distant, oblong, cylindric, bracted, nodding; upper one with an inclosed peduncle, the rest exsertly peduncled, and the lower one long-peduncled: fruit ovate, glabrous, inflated, somewhat 3-sided, beaked, nerved, with a 2-cleft orifice, twice as long as the oblong, emarginate, scabrous-mucronate scale. 20 i. Plant yellowish-green, spikes becoming brown. Wet. Often mistaken for the *tentaculata*. *S.*

limosa, (J. 2f.) spikes distinct; staminate spike without bracts; pistillate spikes somewhat in pairs, ovate or oblong, somewhat long-peduncled; flowers somewhat scattered, pendulous, remotish: fruit oval, compressed, very short-beaked, entire at the orifice, about equalling the ovate-cuspidate and lance-ovate or oblong scale. 1 f. Bracts with very short brownish sheaths. Var. *irrigua*, has sub-cylindric spikes, and long-acuminate, dark red pistillate scales. Var. *variflora*, has sub-linear spikes, loose-flowered, with sub-

circinal pistillate scales. Var. *livida*, has shorter peduncles, few-flowered, oblong-pistillate scale about equal to the fruit, and obtusish, with sub-ovate-oblong fruit, and sub-incurved leaves. Var. *oblonga*, (Dewey.) has spikes somewhat long-cylindric. Alpine. This species is the *lenticularis* of Mx. Dewey.

pseudo-cyperus, (O. M. 2f.) staminate and pistillate spikes distinct; staminate spike peduncled; pistillate spikes peduncled, cylindric, thick, pendulous: bracts somewhat clasping, long-leafy, sub-approximate: scales setaceous: fruit oblong, acuminate-beaked, reflexed, 3-sided, nerved, bicuspidate. 3 f. In clusters. Wet. *S.*

hitchcockii, Dewey. (A. M. 2f.) spikes distinct; staminate spike erect, peduncled; pistillate spikes somewhat in threes, erect; flowers few and scattered; lower spike remote: fruit somewhat 3-sided-oval, inflated, alternate both sides, recurved at the apex, striate, with a short truncate beak and aperture, about equalling the oblong or ovate-mucronate scale. 20 i. Mountain woods.

verna, (E. M. 2f.) staminate spike erect; pistillate spikes in pairs, ovate-oblong, approximating, sub-peduncled: fruit oval, somewhat 3-sided, acute, pubescent, a little shorter than the oblong-ovate, sub-mucronate scale. 6 i. Rocky hills.

H. *Staminate spikes two or more.*

trichocarpa, M. (E. M. 2f.) staminate spikes somewhat in threes, erect: lower ones sessile, rarely androgynous; pistillate spikes in threes, erect, long-cylindric, slender, sub-remote, sub-lax-flowered, exsertly peduncled, excepting that the lowest is nearly inclosed: fruit lance-ovate, sub-conic, inflated, nerved, beaked, 2-forked, dense-pubescent, about twice as long as the lance-ovate scale. 2 f. Wet. Var. *turbinata*, (Dewey.) has the staminate spikes with oblong, mucronate, tawny scale; and the pistillate spikes with the upper ones nearly sessile, or with inclosed peduncles; and the fruit conic, inflated. *S.*

barrattii, T. (L. 2f.) staminate spikes somewhat in pairs; pistillate spikes somewhat in threes, oblong-cylindric, nodding, distant, upper one bearing stamens: fruit oblong, somewhat 3-sided, short-beaked, sub-scabrous, entire at the mouth, a little shorter than the lance-ovate, sub-obtuse scale. 1 f.

filiformis, Gn. (2f.) spikes subsessile, oblong; bracts short-sheathed, leafy, remotish: capsules long-oval, villous, with a 2-forked beak; leaves convolute. 2 f. Staminate spikes one or two, lanceolate; scale of the fruit oblong, with a yellow nerve—pistillates with green nerved scale. Is it an American species?

ampullacea, Gn. (2f.) spikes short-peduncled, cylindric, thick, lax; staminate spikes numerous: bracts clasping, leafy, distant; scales lanceolate: fruit sub-globose, inflated, setaceous-beaked, larger than the scale, diverging: culm obtuse-angled: leaves narrowish, with incurved margins. Staminate spikes three or more. Is it an American species?

vesicaria, (M. 2f.) staminate spikes distinct, somewhat in threes, erect; upper one peduncled, the rest sessile; pistillate spikes in pairs or in threes, cylindric, alternate, erect, dense-flowered, upper one sessile, lower ones sub-peduncled: fruit oblong-ovate, sub-terete, inflated, subulate-beaked, spreading, nerved, glabrous, bi-cuspidate, scarcely twice as long as the ovate-cuspidate scale. 2 f. Wet.

bullata, Sh. (M. 2f.) staminate and pistillate spikes distinct; staminate spikes in threes, longish, upper one peduncled, lower one bracted; pistillate spikes in pairs, exsertly peduncled, oblong, cylindrical, somewhat nodding: fruit ovate, globose, inflated, erect, glabrous, ribbed, with a sub-hispid 2-forked beak, twice as long as the lanceolate scale. 2 f. Wet bogs. Var. *cylindracea*, (Dewey.) has long-peduncled staminate spikes, and long cylindrical pistillate spikes, sub-dense-flowered—fruit long-beaked. *S.*

schweinitzia, Dewey. (E. J. 2f.) spikes distinct ; staminate spikes in pairs, upper one long, slender, peduncled ; pistillate spikes in fours, oblong, cylindric, sub-approximate, with inclosed peduncles, somewhat pendulous, with long leafy bracts : fruit ovate-oblong, tapering above, beaked, inflated, 2-forked, nerved, glabrous, longer than the lanceolate, subulate, sub-setaceous scale. 10 i. Wet, sandy.

retrorsa, Sz. (M. 2f.) spikes distinct ; staminate spikes somewhat in threes, upper one long, peduncled, slender, the rest short, small, often fruit-bearing at the base, sessile ; pistillate spikes somewhat in fives, oblong, cylindric, approximating, sub-fascicled, with leafy bracts and peduncles inclosed, lower one often very remote, with long inclosed peduncles : fruit ovate, inflated, beaked, 2-forked, nerved, reflexed, twice as long as the lanceolate scale. 2 f. In clusters. Wet.

pellita, M. (E M. 2f.) staminate and pistillate spikes distinct ; staminate spikes in pairs, oblong, lower one sessile and bracted ; pistillate spikes in pairs or in threes, cylindric, erect : fruit ovate, short-beaked, bicuspidate, somewhat 3-sided, hairy, about equal to the lance-ovate, awned scale. 20 i. Wet. *S.*

lacustris, W. (O. M. 2f.) spikes distinct ; staminate spikes somewhat in fours, erect, lower ones sessile ; pistillate spikes in pairs or in threes, oblong, cylindrical, erect, nerved, glabrous, a little longer than the lance-oblong scale. 3 f. Wet. *S.*

oligosperma, Mx. (Canada. 2f.) staminate spikes many ; pistillate spike one, globular, sessile : fruit turgidly ovate, largish, few, acute : leaves involute-rushlike.

longirostris, T. (M. 2f.) spikes distinct ; staminate spikes in threes, short, upper one peduncled, middle one sessile, lower one peduncled and furnished with an ovate, cuspidate bract ; pistillate spikes in pairs or in threes, cylindric, pendulous, with scattered flowers somewhat distant, with long exsert peduncles, bracted : fruit ovate, sub-globose, inflated, glabrous, long-beaked and bifid, a little longer than the lanceolate or ovate-cuspidate scale. 2 f. Woods on river banks.

Arctic region.

[These species having been found only in very high northern latitudes in America, they are set by themselves. Probably many of them may be found farther south.]

I. Stigmas two.

dioica, (A. 2f.) spike single, simple, dioecious, rarely androgynous, staminate above, oblong ; pistillate spike oblong or ovate, sub-dense-flowered : fruit oval-ovate, convex both sides, nerved, erectish, serrulately margined above, equalling the ovate scale. 9 i. Var. *davallina*, has serrulate or hispid leaves.

remota, (A. M. 2f.) spikelets androgynous, staminate below, numerous, oblong-ovate, sub-sessile ; lower ones distant with long, leafy, linear bracts beneath : fruit ovate, acuminate and bifid, or plano-convex and sub-bifid, a little longer than the lance-ovate scale. 18 i. Woods.

concolor, Br. (A. 2f.) staminate spike solitary ; pistillate in pairs or in threes, erect, sub-sessile : fruit oval, mucronate, entire, smooth ; scales all about the same colour, obtuse ; culm smooth : bracts auricled.

II. Stigmas three.

mutica, Br. (A. 2f.) staminate spike solitary, with obtuse scales ; pistillate spikes in threes, distant, erect ; peduncles sub-exsert : fruit oval, not awned, smooth, longer than the ovate, mucronate scale : leaves and bracts flat.

affinis, Br. (A. 2f.) one spike androgynous, staminate above, few-flowered, lax : scales lanceolate, acute, the bottom one awned : leaves flat. 6 i.

attenuata, Br. (A. 24.) one spike androgynous, staminate above, dense; pistillate ones few-flowered, about in threes: scales all obtuse.

filifolia, N. (A. 24.) one spike androgynous, staminate above, sub-cylindric, acute: fruit sub-globose, entire at the orifice, with a retuse scale: leaves filiform, involute, subulate. 4 i. This has been seen by Nuttall in Missouri hills, as well as in the Arctic region.

media, Br. (A. 24.) spikes androgynous, staminate below, in threes, sub-sessile, approximate: fruit ovate, beaked, very glabrous, longer than the obtusish, ovate scale.

misandra, Br. (A. 24.) spikes somewhat in threes, oval, peduncled, pendulous, alternate or rarely sub-umbelled; terminal one androgynous, below or rarely all over staminate: fruit lanceolate, acuminate, 2-toothed, denticulate at the apex, longer than the oval, obtusish scale. 6 i.

richardsonii, Br. (A. 24.) staminate spike solitary, peduncled, erect; pistillate spikes in pairs, sub-sessile, approximate, with enclosed peduncles: fruit ovate, obtuse, pubescent, with an ovate acute scale: culm very scabrous. 6 i.

concinna, Br. (A. 24.) staminate spike sessile, cylindrical, oblong; pistillate spikes in threes, sub-sessile, approximating: fruit 3-sided-obovate, very short-beaked, 2-toothed, hispid-pubescent, about twice as long as the obovate scale. 4 i.

capillaris, (A. 24.) staminate spike solitary, peduncled, small: pistillate spikes somewhat in threes with long exsert peduncles, nodding, oblong, with few scattered flowers: fruit oval, beaked, acuminate at both ends, oblique at the orifice, scarcely twice as long as the ovate or oblong, obtuse, caducous scale. 6 i.

podocarpa, Br. (A. 24.) staminate spike solitary; pistillate spikes in pairs, oblong, pendulous: fruit oval, very short-beaked, entire, smooth—seed pedicelled: lower leaves abbreviated.

aristata, Br. (A. 24.) staminate spikes in pairs or many; pistillate spikes somewhat in threes, cylindric, distant, short-peduncled: fruit very glabrous, nerved, long-beaked, deeply bifid; scales awned: leaves villose beneath and on the sheaths.

Southern.

I. Stigmas two.

muskingumensis, Sz. (J. 24.) spike compound; spikelets androgynous, staminate below, oval-oblong, acutish at both ends, somewhat in eights, approximate: fruit lanceolate, compressed, nerved, winged, glabrous, acuminate, 2-toothed, more than twice as long as the lance-ovate scale. 30 i. Wet.

floridana, Sz. (24.) spikes distinct; staminate spike solitary, sessile, small: pistillate spikes somewhat in fours, aggregated, ovate, sessile, bracted, lower one often sub-remote: fruit oval, somewhat tapering at the base, compressed, plano-convex, beaked, shortly bifid, equalling the ovate-oblong, scabrous-cuspidate scale. 6 i. Florida Le Conte, Sz. says the terminal spike is staminate above.

II. Stigmas three.

dasycarpa, M. (E. M. 24.) spikes distinct; staminate spike sub-sessile, small; pistillate spikes somewhat in threes, sub-approximate, oblong, alternate, lower ones sub-peduncled: fruit 3-sided-ovate or oblong, villous, nerved, longer than the ovate acuminate scale. 1 f.

elliottii, T. (1) (E. Ap. 24.) staminate spike solitary, long-bracted; pistillate spikes in threes, roundish, upper ones sessile and the highest one staminate at the apex, the lowest one long-peduncled and nodding: fruit ovate, somewhat 3-sided, glabrous, with small punctures, nerved, long-beaked, 2-forked, much longer than the ovate, obtuse scale. 2 f. Wet sand.

(1) castanea, E.

glaucescens, E. (E. Ap. 2f.) staminate spike solitary, cylindrical, peduncled; pistillate spikes somewhat in threes, peduncled, cylindric, at length pendulous: fruit ovate, 3-sided, compressed, glaucous, beak-bifid, about equalling the ovate, emarginate, mucronate, scale. 2 f. Wet sand.

verrucosa, M. (E. M. 2f.) staminate spikes many or one; pistillate spikes somewhat in fives, erect, cylindric, staminate above, axillary, the lower one exsertly peduncled: fruit ovate, compressed, somewhat 3-sided, short-bifid, shorter than the ovate, sub-emarginate, mucronate scale. 3 f.

cherokeensis, Sz. (W. 2f.) staminate spikes somewhat in threes, sub-cylindric, upper one larger and peduncled; pistillate spikes in fours, cylindric, sub-lax-flowered, distant, with long exsert peduncles, staminate above: fruit ovate, glabrous, somewhat 3-sided and compressed, nerved, long-beaked, bifid, a little larger than the ovate, long-acuminate scale. 1 f.

gigantea, Rudge. (E. Ap. 2f.) staminate spikes many or one; pistillate spikes in threes, cylindric, sub-lax-flowered, remote; upper one sessile, lower ones exsertly peduncled: fruit globe-ovate, conical, long-beaked, nerved, inflated, glabrous, bifid, spreading, twice as long as the oblong-ovate or lance-ovate scale. 2 f. Wet.

Remark. Students should be directed to examine the species of Carex, when they have passed flowering, and before the fruit is quite ripe. The best time is when the fruit has arrived to its full size, but the seed has not yet become hard.

20—10. CARICA. 38. 97.

Southern.

papaya, (O. ♄.) leaves palmate, 7-lobed, middle lobe sinuate; divisions oblong acute: staminate flowers corymbed. Menispermum.

19—12. CARPINUS. 50. 99.

americana, W. (1) (hornbeam, blue beech. O. g. M. ♄.) leaves oblong-ovate, acuminate, unequally serrate: scales of the strobile 3-parted, the middle divisions with a lateral tooth. *S.* Ostrya.

21—3. CARPOBOLUS. 57. 3.

orbicularis, fronds about half an inch in diameter, often confluent, never superincumbent: capsules yellow, semitransparent. Anthoceros.

17—1. CARTHAMUS. 49. 54.

Exotic.

tinctorius, (false saffron, safflower. y. J. ☉.) leaves ovate, entire, serrate-aculeate.

coerulius, (blue saffron. b. 2f.) stem about 1-flowered: leaves lance-ovate, spine-toothed. Cynara.

5—2. CARUM. 45. 60.

Exotic.

carui, (caraway. w. ♂.) stem branching: leaves with ventricose sheaths: partial involucre none. Conium.

19—12. CARYA. 50. 94.

tomentosa, Mx. (2) (white-heart hickory. Ap. ♄.) leafets about 9, lance-oblong, acuminate, slightly serrate, pubescent beneath, scabrous; terminal one sub-petioled: aments filiform, tomentose: fruit sub-globose, smooth,

(1) virginiana, Mx. (2) alba, W.

pericarp very thick; nut somewhat 6-angled; putamen thick, hard; nucleus agreeably tasted. *S.*

alba, L. (1) (shag-walnut, shag-bark hickory. O. M. ♄.) leafets about 7, long-petioled, lance-oblong, acuminate, sharply serrate, villose beneath; the terminal leafet sessile: ament filiform, glabrous: fruit globose, a little depressed: nut compressed, oblique. *S.*

sulcata, W. (2) (shell-bark hickory. Ap. ♄.) leafets about 9, ob-lanceolate, acuminate, serrate, pubescent beneath; the terminal leafets sub-sessile, tapering to the base: fruit roundish, 4-keeled: nut sub-globose, a little compressed, smooth, long-mucronate, 60—80 f. *S.*

amara, Mx. (O. bitter-nut. Ap. ♄.) leafets about 9, ovate-oblong, acuminate, sharply serrate, glabrous both sides; the terminal leafet short-petioled: fruit sub-globose, with the sutures prominent above: nut smooth, sub-globose, mucronate; putamen easily broken; nucleus bitter. *S.*

porcina, Mx. (pig-nut, broom hickory. O. M. ♄.) leafets about 7, lanceolate, acuminate, serrate, glabrous both sides; terminal leafets sub-sessile: fruit pear-form or globose: nut smooth; putamen very thick and hard; nucleus small. Var. *obcordata*, (3) has an obcordate nut. Var. *ficiformis*, has the fruit turbinate and nut oblong. 70—80 f. *S.*

Southern.

aquatica, Mx. (O. Ap. ♄.) leafets about 11, narrow, obliquely lanceolate, acuminate, sub-serrate, glabrous, sessile: fruit peduncled, ovate; sutures 4, prominent: nut roundish compressed; putamen thin; nucleus bitter. 40—50 f.

myristicaeformis, Mx. (E. Ap. ♄.) leafets 5, ovate-lanceolate, acuminate, serrate, glabrous; terminal one sessile: fruit oval, rugose, scabrous: nut oval slightly acuminate, furrowed, very hard.

olivaeformis, W. (W. Ap. ♄.) leafets numerous, (13—15.) lanceolate, subfalcate, serrate; petioles not in pairs: fruit oblong, 4-sided: nut olive-shaped, smooth. Acalypha.

10—1. CASSIA. 33. 93.

marilandica, (wild senna. O. y. Au. 2[.) somewhat glabrous: leaves in 8 pairs, lance-oblong, mucronate; flowers in axillary racemes, and in terminal panicles: legumes linear, curved. An excellent mild cathartic. B. River alluvion. 2—4 f. *S.*

chamæcrista, (cassia, partridge pea. E. y. Au. ☼.) somewhat glabrous: leaves linear, in many pairs, the glands on the petioles sub-pedicelled: two of the petals spotted: legumes pubescent. A most elegant plant. 8—16 i. Dry sand, &c. *S.*

nictitans, (E. y. Ju. ☼.) spreading, pubescent: leaves in many pairs, linear; glands of the petioles pedicelled: peduncles short, supra-axillary, 2 or 3-flowered; flowers pentandrous. The leaves of this species, and of the chamæcrista, possess a considerable degree of irritability. 12 i. *S.*

fasciculata, (E. y. Ju. ☼.) somewhat glabrous: leaves at the summit, in 9 pairs: gland sessile near the middle of the petiole: fascicles many-flowered, lateral: petals and stamens of the same colour: legumes glabrous, ascending, arched. *S.*

Exotic.

senna, (Egyptian senna. ☼.) leaves in 6 pairs; petioles glandless: legume reniform.

Southern.

tora, W. (E. y. Ju. ☼.) glabrous: leaves in 3 pairs, obovate, ciliate; termi-

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(1) compressa, W. squamosa, Mx. arb. (2) laciniosa, Mx. arb. mucronata, Mx. (3) These two varieties are the species obcordata and glabra of W.

nal ones largest; a subulate gland between the lower pair: peduncles few-flowered, axillary: legumes curved. 3 f.

occidentalis, W. (O. y. Ju. 2[. ♄.) glabrous: leaves in 5 pairs, ovate-lanceolate, acuminate, scabrous along the edges: peduncles clustered, few-flowered, axillary: legumes compressed, falcate. 4—6 f.

ligustrina, W. (E. y. Ju. Au. 2[. ♄.) pubescent: leaves in 7 pairs, lanceolate; exterior ones smallest: peduncles terminal, somewhat paniculate: legume oblong slightly falcate.

linearis, Mx. (E. y. J. 2[.) glabrous: leaves in 5 or 6 pairs, ovate, acute: peduncles axillary, few-flowered: legumes terete.

procumbens, W. (E. y. ☼.) leaves in many pairs, without glands: stem procumbent. Flowers small.

aspera, M. (L. S. ☼.) strigose, rough: leaves in many pairs, linear, lanceolate, ciliate: peduncles few-flowered, above the axils: stamens 9—7; 3 longer than the rest. 1—3 f. Baptisia.

19—12. CASTANEA. 50. 99.

vesca Var. *americana*, (chesnut. O. g. J. ♄.) leaves lance-oblong, sinuate-serrate, with the serratures mucronate, glabrous both sides. Large tree. *S.*

pumila, (chinquapin. E. g. J. ♄.) leaves oblong, acute, mucronate-serrate, with white down beneath. Small tree. *S.*

Southern.

nana, M. (1) (E. M. ♄.) leaves oval-lanceolate, rather obtuse, mucronately-serrate, shining on the upper surface, slightly tomentose beneath. 1—2 f. Betula.

13—2. CASTILLEJA. 40. 35.

Southern.

occidentalis, T. & J. (W. 2[.) stem simple, pilose: leaves linear-lanceolate, narrowing towards the apex, minutely pubescent, entire, acutish: flowers spiked, sessile: corol scarcely exceeding the calyx: bracts 3-cleft; divisions erect. Schwalbea.

Castilleja, EUCHROMA.

2—1. CATALPA. 40. 45.

cordifolia, Duham. (2) (M. w. & y. ♄.) leaves simple, cordate, entire, by threes: flowers in panicles. 40—50 f. *S.* Justicea.

22—2. CATHARINEA. 56. 4.

undulata, leaves lanceolate, serrate, undulated, crisped when dry: capsule cylindric: lid subulate. In woods and shades. Riccia.

19—1. CAULINIA. 15. 6.

flexilis, (water knot-grass. E. Au. ☼.) leaves in sixes, toothed at the apex, spreading. Immersed in ditches, &c. *S.*

fragilis, (E. S. ☼.) leaves in threes or opposite, linear-subulate, recurved, aculeate-toothed, rigid. Immersed. *S.* Zannichellia.

6—1. CAULOPHYLLUM. 24. 61.

Remark. To the generic description of p. 34, it should be added: that the supposed drupe is but a naked seed elevated on a funicule-like stipe, after having burst its caducous pericarp. See Torrey's Flora, p. 336. Dr. Darling-

(1) alnifolia, N. (2) syringaefolia, Ph. Bignonia catalpa, W.

ton says (M. S.) he has closely watched this plant three years, and knows this remark of R. Brown to be correct.

thalictroides, Mx. (1) (poppoose root, false cohosh. O. p-y. Ap. 4.) very glabrous: leaves more than decompound; leafets oval, the lower ones petioled and lobed, the end ones 3-lobed. Berries dark blue. Woody. 1 f. *S.*
Berberis.

5—1. CEANOTHUS. 43. 95.

americanus, (New-Jersey tea. O. w. J. ♄.) leaves ovate, acuminate, serrate, 3-nerved, pubescent beneath: panicles axillary, long-peduncled, sub-corymbed. *S.*
herbaceus, R. (2) (E. M. 4.) leaves oval, sub-serrulate, smooth: panicle thyrroid, axillary and terminal. *S.*
ovalis, Bw. (Lake Champlain.) leaves oval, with glandular serratures, 3-nerved; nerves pubescent beneath: panicle corymbose, abbreviated.

Southern.

intermedius, M. (O. J. ♄.) leaves oblong-oval, acute, mucronate-serrulate, 3-nerved, pubescent beneath: panicles axillary, on long peduncles; pedicels corymbed, flaccid.
microphyllus, Mx. (E. Ap. ♄.) leaves very small, obovate, nearly entire, clustered, glabrous: racemes corymbose, terminal. 1—2 f.
sanguineus, Ph. (W. M. ♄.) leaves obovate, serrate, pubescent beneath: panicle axillary, compact, short-peduncled; pedicels aggregate. 3 f.
serpyllifolius, N. (E.) branches filiform: leaves small, elliptic-ovate, serrulate, obtuse; petioles and nerves strigose beneath: panicles pedicelled, axillary, few-flowered; flowers conglomerate.
Euonymus.

5—1. CELASTRUS. 43. 95.

scandens, W. (false bittersweet, staff tree. O. y-w. J. ♄.) stem twining: leaves oblong, acuminate, serrate: racemes terminal. Retains its scarlet berries through the winter.

Southern.

bullatus, W. (E. ♄.) unarmed: leaves ovate, acute, entire: panicle terminal.
Gomphrena.

5—2. CELTIS. 53. 99.

occidentalis, W. (nettle tree. E. w. M. ♄.) leaves ovate, acuminate, equally serrate, except near the base; scabrous above, rough-haired beneath: fruit solitary. Var. *integrifolia*, leaves entire: bark of the tree not rimose. *S.*
crassifolia, W. (hag-berry, hoop ash. E. w. M. ♄.) leaves ovate, acuminate, unequally serrate, unequally cordate at the base, sub-coriaceous; peduncles about 2-flowered. *S.*
pumila, Ph. (3) (E. M. ♄.) leaves ovate, acuminate, equally serrate, unequal at the base, smoothish on both sides; the younger ones only pubescent: peduncles mostly 3-flowered: fruit solitary. Berries brown and glaucous. 2 f. *S.*

Southern.

reticulata, T. & J. (W. ♄.) leaves broad-cordate, pubescent, sub-coriaceous, somewhat entire, obtusish, unequal at the base, papillose-scabrous above, reticulate, prominent veins beneath: peduncles 1-flowered.
Beta.

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(1) Leontice thalictroides, W. (2) perennis, Ph. (3) occidentalis. Var. pumila, M.

3—1. Cenchrus. 4. 10.

echinatus L. (burr grass. E. Ju.—Au. ☼.) spike with the flowers approximated: involucre sub-globose, villose: culm compressed. Erect or procumbent. Sandy soil. 1—2 f. *S.* Var. *tribuloides*, W. (L.) spikes and margins of the sheaths, white-pubescent. 1 f. *S.* Limnetis.

21—5. Cenomyce. (1) 57. 2.

1. *Frond foliaceous: peduncle* (podetia) *fistulous, dilated upwards, bearing cups, or attenuate-subulate: the cups closed with transverse membranes.*

(Receptacles sooty-yellow or pale.)

cæspiticia, *Ach.* Frond minutely cleft: podetia very short, marginal. On earth.

alcicornis, frond foliaceous, marked, becoming pale-green; divisions sub-palmate, ascending, repand-toothed, obtuse, inflexed, fascicles of hairs at the margin: peduncles long-turbinate, all bearing cups, smooth: cups regular, crenate, at length leafy and proliferous at the margin: receptacles yellowish or tawny.

endiviæfolia, *Ach.* in dry rocky situations. Frond large, leafy, yellowish-green, white beneath: segments multifid: podetia also very minute. On earth.

verticillata, *Ach.* podetia cylindric, glabrous, livid-greenish; the margin dilating horizontally, proliferous from the centre. On earth among mosses.

pyxidata, frond foliaceous; divisions crenulate, ascending: peduncles all turbinate, cup-form, glabrous, at length warty-granulate, scabrous, greenish-grey: cups regular; afterwards the margin is extended and proliferous: receptacles tawny.

fimbriata, frond foliaceous; divisions small, crenate: peduncles elongated, cylindric, bearing cups; some are awl-form, very thinly pulverulent, white: cups wine-glass-form, regular; margin entire and crenate, at length proliferous: receptacles tawny.

gonorega, frond foliaceous; divisions broadish, gash-crenulate: peduncles longish, glabrous, somewhat warty, glaucous or whitish-green; when drying it becomes dark-coloured, white-dotted; all bearing cups, which are irregular, somewhat torn-radiate; margin proliferous, leafy: receptacles tawny.

(Receptacles scarlet or dark red.)

bacillaris, frond foliaceous, minute; divisions gash-lobed, crenate, nakedish beneath: peduncles cylindric, simple, sub-ramose at the apex, white-cinereous, with pulverulent granulations; rarely bearing cups, which are narrow, at length radiate: receptacles scarlet. On decaying trunks.

deformis, frond foliaceous, minute; divisions broadish, gashed, crenate, naked beneath: peduncles long, thick, sub-ventricose, sulphur-colour, thinly-pulverulent; bearing cups, which are narrow, crenate-toothed, at length dilated and torn: receptacles sessile and pedicelled, scarlet. On the earth in woods and mountains.

coccifera, frond foliaceous, minute; divisions round, crenate, naked beneath: peduncles long-turbinate, naked, warty-scabrous, pale-yellowish, cinereous and green; all bearing cups, which are wine-glass-form; margin extended, fertile: receptacles rather large, at length roundish, scarlet.

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(1) Bæmyces of Acharius, in a former edition of his work.

2. *Frond leafy : peduncle* (podetia) *fistulous, dilated above, bearing cups, which are not closed.*

parecha, frond foliaceous, largish ; divisions narrow, pinnatifid, crenulate : peduncles smooth, pale, obconic, cup-form ; cup somewhat pervious ; margin torn, dentate ; the proliferous parts ramose, thick, not cup-form ; apexes denticulate : receptacles terminal, aggregate, tawny. Often on sterile earth.

3. *Frond leafy : peduncles* (podetia) *sub-fistulous, cylindric, simple, split at the apex, or sub-digitate-rayed ; rays all fertile.*

cariosa, frond foliaceous, minute ; lobes crenulate : peduncle white, latticed as if worm-eaten, warty-granulate, divided somewhat in a digitate form at the apex : branches fastigiate : receptacles crowded, dark-tawny.

symphycarpa, frond foliaceous ; lobes roundish, crenulate, livid : peduncles shortish, smooth, sub-divided at the apex : receptacles heaped together, tawny.

botrytes, *Ach.* podetia slender, fastigiately branching, rough ; apothecia peltate, pale, crowded. Rotten wood and earth.

delicata, frond foliaceous ; lobes minute, erose-laciniate, granulated : peduncles glabrous, granulate, pale, somewhat divided at the apex : branches very short : receptacles conglomerate, dark-tawny. On decaying trunks or earth.

capitata, frond foliaceous : lobes imbricated, somewhat olive-coloured : peduncles sub-simple, somewhat straw-like : receptacles heaped in a sub-globular form, reddish-yellow.

4. *Frond leafy, almost wanting or disappearing : peduncle* (podetia) *cartilaginous, rigid, fistulous, all attenuated and subulate, ramose, mostly perforated at the axils.*

acicularis, peduncles stiffly-erect, terete, warty-wrinkled, white, sub-simple : receptacles capitate, sub-globose, sub-solitary, shining, dark-tawny.

furcata, peduncle elongated, smooth, livid, and somewhat chesnut-brown, dichotomous : axils not perforated : branches auricular, curved, forked at the apex, diverging : receptacles of the fertile ones tawny.

uncialis, peduncles elongated, glabrous, pale, dichotomous : axils perforated, standing open ; apex of the branches spreading, short, rigid : receptacles terminal, becoming tawny.

adunca, peduncles pale or hoary, fork-branched : axils perforated ; apex of the branches radiately hook-spined : receptacles capitate, pale-tawny. A variety of the last ?

rangiferina, peduncles elongated, cylindric, erect, somewhat scabrous, becoming cinereous, ramose : axils at length perforated : branches scattered and sub-divided ; the extreme branchlets sub-radiated ; apexes nodding : receptacles of the fertile ones sub-globose, aggregate, tawny.

sylvatica, peduncles white-hoary, softish, thickish and turgid : branches short, scattered, terminal, erectish, sub-fastigiate : apex sometimes dilated and somewhat torn. Variety of the last ?

alpestris, peduncles white, softish, very branching : branches and branchlets interwoven, terminal, forming a dense thyrse. Variety of the last ?

5. *Frond none : peduncle* (podetia) *soft, sub-solid, subulate, somewhat branched,* (sterile :) *axils not perforated.*

vermicularis, peduncle somewhat awl-form, sub-simple, smooth, very white, sub-fistulous, zigzag, prostrate. Baemyces.

17—3. CENTAUREA. 49. 54.

Exotic.

cyanus, (blue bottle. b. w. r. J. ☼.) scales of the calyx serrate: leaves linear, entire; lower ones toothed. Naturalized.

jacea, (knapweed. p. Ju. 2f.) leaves lanceolate, entire; radical ones subdentate: branches angular: calyx scarious. Naturalized.

benedicta, (blessed thistle. y. J. ☼.) scales of the involucre doubly armed with spines, woolly, bracted: leaves somewhat decurrent, toothed, spiny. Naturalized.

solstitialis, (y. Ju. ☼.) calyx palmate-spinose, solitary: spines straight: leaves hoary, lance-linear, decurrent, entire; radical ones lyrate. Naturalized.

nigra, L. (p. Au. 2f.) scales of the calyx ovate, with an erect capillary fringe: lower leaves lyrate-angular; upper ones ovate. Naturalized. 2 f.

calcitrapa, (☼.) scales of the calyx somewhat doubly spinous, sessile: leaves pinnatifid, linear, dentate: stem pilose.

centaurium, (great centaury. 2f.) leaves pinnate, glabrous; leafets sharply and doubly serrate, decurrent: calyx smooth.

scabiosa, (scabrous centaury. 2f.) leaves pinnatifid, roughish; divisions lanceolate, spreading, acute, pinnatifid at the base: calyx ciliate.

suaveolens, (yellow sultana. ☼.) leaves lyrate-pinnatifid: calyx smooth.

moschata, (sweet sultana. ☼.) leaves slightly pinnatifid; lower divisions mostly entire: calyx smooth.

Southern.

americana, N. (W. ☼. or ♂.) stem somewhat branching, sulcate: leaves sessile; lower ones oblong-ovate, repand-toothed; upper ones lanceolate, acute: leafets of the calyx furnished with recurved pinnate appendages: peduncles thick at the apex. 4—6 f. Leptopoda.

4—1. CENTAURELLA. 20. 34.

Southern.

verna, Mx. (1) (E. w. March. ☼.) stem simple, few-flowered, (1—3:) corol thrice as long as the calyx: style as long as the germ. 4—8 i.

aestivalis, Ph. (E. Ju. ☼.) stem simple: peduncles opposite, simple; divisions of the corol spatulate, abruptly acute, thrice as long as the calyx: style the length of the germ. 2—4 i. Ammannia.

Centaurella, BARTONIA.

4—1. CENTUNCULUS. 20. 34.

Southern.

lanceolatus, Mx. (O. r. March ☼.) leaves lanceolate, oval and obovate, acute: flowers axillary, sessile: stem prostrate. 2—3 i.

minimus, N. (W. Ju.) stem simple or with a single branch, sub-angular: leaves alternate, spatulate-ovate, acute: flowers sub-sessile. Often pentandrous. 4—6 i. Callicarpa.

4—1. CEPHALANTHUS. 48. 56.

occidentalis, L. (button bush. O. w. Ju. ♄.) leaves opposite and in threes, oval, acuminate. Inflorescence a round head. Swamps. Var. *pubescens*, has the leaves and branchlets pubescent. 4—5 f. S. Dipsacus.

21—4. CERAMIUM. (2) 57. 2.

1. *Red or reddish.*

rubrum, threads dichotomous, very branching, sub-cartilaginous: branchlets

(1) vernalis Ph. (2) Species of Conferva of Linneus and others, excepting the aureum, which is a Byssus.

forked; joints ovate, opake; knee-joints contracted: capsules involucred. Bays, &c.

diaphanum, threads dichotomous, very branching, sub-membranaceous, variegated with purple and hyaline; branchlets forceps-like; joints cylindric, hyaline; knee-joints elevated: capsules involucred. Bays, &c.

2. *Yellowish or rust-colour.*

ferrugineum, threads slender, divaricately ramose, loosely entangled: joints twice as long as their diameter. Sea.

littorale, threads very slender, woven into a rope-like frond: branches erect; joints with their length equalling their diameter. Lakes, &c.

cyrrhosum, branches pinnate, spreading, approximate, stiff and straight: length of the joints nearly equalling their diameters. Seas, bays, &c.

aureum, threads flexuose, fascicled in a dense, soft, cushion-like tuft: branches elongated, spreading, somewhat rigid: joints twice as long as their diameters. On damp rocks and overflowed timber, &c. Lamania.

13—1. CERANTHERA. 42. 39.

Southern.

linearifolia, E. (E. r-w. S. ☼.) stem glabrous, branching: leaves opposite, linear, sometimes clustered: racemes terminal: peduncles opposite. 12 i. Obolaria.

10—5. CERASTIUM. 22. 82.

vulgatum, L. (mouse-ear, chick weed. O. w. Ap. ☼.) hirsute, viscid, cespitose: leaves ovate: petals oblong, about equal to the calyx: flowers longer than the peduncle. 6—10 i. *S.*

viscosum, L. (E. w. J. ☼.) hairy and viscid, spreading: leaves lance-oblong: flowers shorter than their pedicels: petals obovate, scarcely longer than the calyx. 4—6 i. *S.*

semidecandrum, L. (E. w. M. ☼.) hirsute, viscid: leaves ovate-oblong, acute: petals emarginate, shorter than the calyx: peduncles longer than the calyx: flowers pentandrous. 6—12 i. *S.*

hirsutum, M. (1) E. w. M. ☼.) very hairy: leaves oval, obtuse, connate: flowers clustered: petals 2-cleft, a little longer than the acute calyx. 4—8 i. *S.*

dichotomum, M. (w. ☼.) leaves lanceolate: stem dichotomous: capsules erect, twice as long as the calyx.

alpinum, L. (A. w. ♃.) leaves lance-oval: panicle dichotomous, few-flowered, bracted: capsule oblong recurved.

nutans, R. (2) (E. w. J. ☼.) viscid, pubescent: stems erect, striate: leaves elongated, distant, oblong-linear, acute; radical ones spatulate: petals oblong, 2-cleft at the apex, longer than the calyx: peduncles at length much longer than the flower. 6—12 i. *S.*

oblongifolium, T. (O. w. J. ♃.) cespitose, pubescent: stems erect, terete: leaves lanceolate-oblong, sub-acute, shorter than the joints: flowers terminal, shorter than their pedicels: petals obovate, bifid at the tip, twice as long as the calyx. 6—12 i.

tenuifolium, Ph. (O. w. M. ♃.) very slender, pubescent, cespitose: leaves narrow-linear, longer than the internodes: petals obovate, emarginate, about thrice as long as the acute calyx.

arvense, W. (O. w. J. ♃.) pubescent, cespitose: leaves lance-linear, obtuse, ciliate at the base, shorter than the internodes: petals obcordate, twice as long as the calyx; leafets of the calyx obtuse.

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(1) semidecandrum, Wr. (2) glutinosum, N. longepedunculatum, M.

Southern.

segetum, Ph. (W. A. ☌.) hirsute: leaves linear, divaricate, longer than the internodes: peduncles terminal, long, twice trichotomous: bracts opposite ovate: petals emarginate, twice as long as the acute calyx: capsule subglobose. Agrostemma.

Cerasus, PRUNUS.

20—2. CERATIOLA. 18. 51.

Southern.

ericoides, W. (E. Au. ♄.) branchlets partly tomentose: leaves verticiliate, narrow, linear, smooth. An evergreen shrub. 4—6 f. Empetrum.

3—2. CERATOCHLOA. 4. 10.

cinloides, Beauv. (E. Ju. ☼. or ☌.) panicle nodding, spreading; spikelets oblong-lanceolate, compressed, 6—8 flowered; florets acuminate, unarmed: sheaths bearded at the throat, the lower ones hairy: root fibrous. S. Diarrhena.

19—12. CERATOPHYLLUM. 15. 91.

demersum, W. (hornwort. E. Ju. ☌.) leaves 8 in a whorl, dichotomous in two pairs, tooth-spined on the back: flowers axillary: fruit 3-spined.
submersum, L. (☌.) leaves dichotomous in three pairs: fruit without spines. In water. Myriophyllum.

10—1. CERCIS. 33. 98.

canadensis, (red-bud, judas tree. r. M. ♄.) leaves round-heart-form, acuminate, villose at the axils of the nerves: stipules minute: legumes short-stiped. Var. *pubescens*, has roundish, acute leaves, pubescent beneath. 15—30 f. S. Rhodora.

3—2. CERESIA. 4. 10.

Southern.

fluitans, E. (E. Oc. ☼ ?) stem creeping and ascending, generally floating: leaves scabrous: spikes numerous; glumes of the calyx white, dotted, somewhat hairy. 1—3 f. Cynodon.

Ceropegia, CYNANCHUM.

21—5. CETRARIA. 57. 2.

islandica, (1) (the iceland lichen, iceland moss. C. Y.) frond olive-chesnut-brown, at the base reddish-white, white beneath; divisions erectish, sublinear, many-cleft, channelled, tooth-ciliate; the fertile ones dilated: receptacles close-pressed, flat, one-coloured; margin frond-like, elevated, entire. On sandy plains, as on the barren plains near Beaver-ponds, in New-Haven, where it covers the earth very densely in many places.
juniperina, frond pale-yellow, very yellow beneath: divisions flat, ascending, erose-crenate, crisped: receptacles elevated: disk liver-brown: margin frond-like, crenulate. On trunks and branches.
pinastri, frond with divisions depressed, round-lobed, crenate: margin crisped, pulverulent, very yellow. A variety of the last?
ciliaris, frond livid-tawny, reticulate-lacunose, white beneath; divisions crisped, ciliate: receptacles somewhat elevated, dark-tawny; margin frond-like, crenate.
lacunosa, frond ample, whitish-green, rugose-reticulate, cellular, whiter be-

(1) Physica islandica, Mx.

neath, round-lobed ; margin torn-crenate : receptacles large, elevated, reddish-yellow : margin frond-like, flexuose, sub-entire.

glauca, *Ach.* frond glaucous, tawny, brown underneath. On stones and fences.

viridis, Sz. frond glaucous green, lacunose reticulated, underneath pale-yellow, margin complicately waved and beset with black soredia ; apothecia chesnut-brown, margin inflected, lobed and dentated. On small limbs in cedar swamps. Sticta.

Chaerophyllum, URASPERMUM.

6—3. CHAMAEROPS. 1. 11.

Southern.

serrulata, W. (E. Ju. ♄.) caudex creeping ; stipes sharply serrate : fronds plaited palmate. Fronds 2 f.

hystrix, Fras. (1) (E. Ju. ♄.) caudex creeping ; stipes intermingled with long thorns : fronds plaited palmate. Fronds 4—5 f.

palmetto, W. (E. Ju. ♄.) caudex arborescent ; stipes unarmed : spathes doubled : fronds plaited, palmate. Fronds 5—6 f. Calochortus.

17—4. CHAPTALIA. Vent. 49. 55.

Southern.

integrifolia, Mx. (2) (E. p-w. J. 2ℓ.) leaves oblong-lanceolate, and obovate, retrorsely denticulate, tomentose, and silvery beneath : scape naked, 1-flowered : flowers nodding. Pursh says the leaves are ovate-oblong, entire. Parthenium.

19—1. CHARA. 15. 6.

vulgaris, W. (feather-beds. O. Ju. ☼.) stem and branches naked at the base ; branchlets terete ; joints leafy : leaves oblong-subulate : bracts shorter than the berry. Odour disagreeable. Ponds and ditches mostly stagnant. *S.*

foliosa, W. (E. Ju. ☼.) stem naked, papillose above : branchlets terete and leafy at the base and leafy in the joints : leaves linear : bracts shorter than the berry. In clear water. *S.*

flexilis, W. (E. Au. ☼.) stem translucent, naked : branchlets jointless, leafless, compressed : berries lateral, naked. Ponds in Stockbridge. *S.*

glabra, M. (E. Ju.) whole plant glabrous. *S.*

Southern.

capitata, E. (E. A.) stem and branches terete, glabrous ; joints leafy : fruit in heads : bracts a little longer than the berry. Podostemum.

21—1. CHEILANTHES. 55. 5.

vestita, W. (lip-fern. E. 2ℓ.) frond doubly pinnate, hairy both sides : leafets pinnatifid ; divisions oblong, obtuse, entire : stipe and racemes rough-haired. Small, on rocks. *S.*

Southern.

dealbata, Ph. (W. Ju. 2ℓ.) frond triply pinnate : leafets oval, distinctly crenate or emarginate at the apex, whitish beneath. Hymenophyllum.

14—2. CHEIRANTHUS. 39. 63.

pallasii, Ph. (W. r. Ju. ♂.) stem simple, terete, somewhat glabrous : leaves glabrous, lanceolate-linear, tapering, repand-toothed.

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(1) Sabal hystrix, N. (2) Tussilago, Mx. W. C. tomentosa, Ph.

Exotic.

cheiri, (wall-flower. J. 2[.) leaves lanceolate, acute, glabrous : branches angled : stem somewhat of a woody texture.

fenestralis, (waved wall-flower. ♂.) leaves crowded together in a head, recurved, undulate : stem undivided.

annuus, (stock july-flower. Ju. ☼.) leaves lanceolate, sub-dentate, obtuse, hoary : silique cylindric, with an acute apex.

incanus, (brompton stock, brompton queens. ♂.) leaves lanceolate, entire, obtuse, hoary : silique truncate, compressed at the apex : stem somewhat of a woody texture.

Southern.

asper, N. (W. y. J. ♂.) leaves sharply-serrate ; upper ones lanceolate, lower ones pinnatifid below : silique shortish, short-peduncled. Hesperis.

12—1. CHELIDONIUM. 27. 62.

Exotic.

majus, W. (celandine. y. M. 2[.) umbels axillary, peduncled : leaves alternate, pinnate, lobed. Naturalized. Glaucium.

Chelidonium, MECONOPSIS.

13—2. CHELONE. 40. 45.

glabra, (1) (snakehead. O. w. & r. Ju. 2[.) leaves opposite, lance-oblong, acuminate, serrate : spikes terminal, dense-flowered. Var. *alba*, leaves subsessile : flowers white. Var. *purpurea*, leaves short-petioled : flowers purple. Var. *lanceolata*, leaves lanceolate, acuminate, serrate, sessile, pubescent beneath : segments of the calyx oblong. Some authors make a species *obliqua*, which they say, has all the leaves opposite, and that the glabra has the lower leaves alternate—sed quere?—Damp.

Southern.

lyoni, Ph. (E. p. Au. 2[.) glabrous, branching : leaves petioled, cordate-ovate, serrate : spikes terminal : flowers clustered.

latifolia, M. (E. r. Au.) glabrous : leaves broad, ovate and oval, serrate, abruptly acuminate, tapering at the base, petioled : flowers crowded : bracts and calyx ciliate. 2 f. Penstemon.

5—2. CHENOPODIUM. 12. 29.

rhombifolium. M. (J. ☼.) leaves triangular-rhombic, acute, repandly toothed : racemes axillary, erect, leafless : bracts minute inflexed.

album, L. (O. g. Ju. ☼.) leaves rhomboid-ovate, erose, entire behind, the upper ones oblong, entire, seed smooth. Var. *viride*, leaves lance-rhomboid, sinuate-toothed : racemes ramose, sub-foliaceous : stem very green. 2—4 f.

hybridum, L. (E. Ju. ☼.) leaves cordate, angular-toothed, acuminate : racemes branching, somewhat cymose, divaricate, leafless. Var. *simplex*, stem simple, 5-angled : leaves ovate, sub-cordate, coarsely repand-toothed : spike simple, terminal, naked. 2—3 f. *S.*

rubrum, L. (E. r-g. Ju. ☼.) leaves rhomboid-triangular, deeply toothed and sinuate : racemes erect, compound, leafy. 2—3 f.

ambrosioides, L. (sweet pigweed. O. g. Ju. ☼) leaves lanceolate, remotely toothed : racemes leafy, simple. Sweet scented. 1—2 f. *S.*

botrys, L. (oak-of-jerusalem. O. g. J. ☼.) leaves oblong, sinuate : racemes naked, many-cleft. Sweet scented. 12 i. *S.*

anthelminticum, L. (wormseed. E. g. Au. 2[.) leaves oblong-lanceolate, tooth-

(1) obliqua, W.

ed: spikes long, interrupted, leafless. Odour strong. A good anthelmintic, B. 12—24 i. *S.*

glaucum, L. (E. ♃.) leaves oblong, repand, glaucous beneath: spikes simple, naked, glomerate, axillary, terminal.

maritimum, L. (sea pigweed. L. g. Au. ♃.) leaves subulate, fleshy, semi-terete: flowers glomerate, axillary. 18—24 i. *S.*

murale, W. (Ju. ☼.) leaves ovate, unequally toothed, acute, shining: racemes branching, cymose, leafless.

bonus-henricus, L. (english mercury. E. g. J. ♃.) leaves triangular, saggitate, entire: spikes compound, leafless, axillary and terminal, erect.

Exotic.

scoparium, (summer cypress.) leaves flat, lance-linear, margin ciliate: flowers glomerate, axillary.

Southern.

subspicatum, N. (W.) stem 4-angled: lower leaves hastate-ovate, bidentate, acute; upper ones sub-lanceolate: racemes glomerate, simple, terminal. Salsola.

10—1. CHIMAPHILA. Ph. (1). 18. 51.

maculata, L. (spotted winter-green. O. w. Ju. ♃.) leaves lanceolate, rounded at the base, remotely serrate, marked with long spots: scape 2 or 3-flowered filaments woolly.

umbellata, W. (prince's pine, bitter wintergreen. O. r-w. Ju. ♃.) leaves serrate, uniformly green, wedge-lanceolate, with an acute base: scape corymbed: filaments glabrous. Both species are tonics and diuretics, and resemble in their effects the Arbutus uva-ursi. B. Ledum.

5—1. CHIOCOCCA. 45. 57.

Southern.

racemosa, W. (E. y-w. Ju. ♄.) leaves ovate-oblong, acute, flat: racemes axillary, peduncled, simple. Lonicera.

2—1. CHIONANTHUS. 44. 37.

virginica, W. (fringe tree. w. M. ♄.) panicle terminal, trifid: peduncles 3-flowered: leaves acute. Var. *montanus*, leaves oval-lanceolate, coriaceous, glabrous: panicle dense: drupe oval. Var. *maritimus*, leaves obovate-lanceolate, membranaceous, pubescent: panicle very lax: drupe elliptic. Berries purplish-blue. *S.* Ornus.

Chironia, SABBATIA.

3—2. CHLORIS. 4. 10.

Southern.

petraea, Sw. (sea-side chloris. L. Ju. ♃.) spikes by fours, digitate, straight erect: flowers imbricate, glabrous, unawned; exterior valve of the calyx awned: stem compressed.

monostachya, Mx. (E. Ju. ☼.) spike solitary: spikelets about 6-flowered: flowers awned, bearded at the margin: exterior valve of the calyx roughened by glands, awned on the back.

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(1) Pyrola, L. The Chimaphila was long united to the Pyrola. Though they possess strong botanical affinities, they differ quite as much in habit, and sensible, as well as medicinal properties, as other genera of the natural order Ericae. Such divisions of the Linnean genera, where the "natural genus gives the characters," ought to be adopted. But divisions founded on any artificial character, however constant and decisive, injure the science.

secundus, Ph. (1) (W. 2f.) glabrous, leaves linear: spike elongated, one sided: spikelets solitary and reflexed after defloration: glumes of the calyx linear-lanceolate, very acute. Aegilops.

Chloris, Eleusine.

Chondrilla, see Borkhausia.

Chondrocarpus, Hydrocotyle.

21—4. Chordaria. (2) 57. 2.

filum, frond filiform, very simple, terete, attenuate at the apex and base; constructed of fibres spirally twisted. Colour tawny-olive, substance tenaceous. Sea. Laminaria.

17—2. Chrysanthemum. 49. 55.

leucanthemum, W. (ox-eyed daisy. O. J. 2f.) leaves clasping, lanceolate, serrate, cut-toothed at the base: stem erect, branching. 12—20 i. *S.*

arcticum, W. (W. p-w. 2f.) radical leaves 3-parted, gash-toothed; cauline ones wedge-form, 3-parted, obtuse. 12 i. *S.*

Exotic.

parthenium, (feverfew.) leaves petioled, compound, flat: leafets ovate, gashed: peduncles branching, corymbed: stem erect.

carinatum, (three coloured daisy. r. w. Au. ☼.) leaves bipinnate, fleshy, glabrous: scale of the calyx carinate.

coronarium, (garden chrysanthemum. Au. ☼.) leaves bipinnatifid, acute, broader outwards: stem branching. Bellis.

11—1. Chrysobalanus. 36. 92.

Southern.

oblongifolius, Mx. (E. w. J. ♄.) leaves oblong-lanceolate, cuneate at the base, entire, glabrous, shining: flowers panicled: fruit oblong. "Mx. observes that it varies with the leaves woolly and hoary on the under surface." Elliott 1—2 f. Tigarea.

17—1. Chrysocoma. 49. 55.

virgata, N. (goldy locks. L. y.) herbaceous, smooth: leaves narrow, linear. stem branching; branches corymbed, fastigiate, virgate: scales of the calyx glutinous, appressed. 18 i.

Southern.

nudata, Mx. (E. y. Sept. 2f.) radical leaves spatulate, lanceolate; cauline ones linear, scattered: corymb compound, fastigiate: calyx oblong, 3—4-flowered. 2 f.

graveolens, N. (3) (W. y. Oc. ♄.) leaves linear, 3-nerved, smooth, impunctate: branches whitish, tomentose: flowers corymbed, fastigiate, crowded: calyx angular, smooth, 5-flowered. 6—8 f.

nauseosa, Ph. (W. y. Oc. 2f.) calyx peduncled; calyx and leaves, woolly pubescent: leaves narrow-linear: corymb somewhat lax: calyx lax, 5-flowered: inner scales divaricate, glabrous. Cacalia.

17—4. Chrysogonum. 49. 55.

Southern.

virginianum, W. (E. y. J. 2f.) low: woolly-villose: leaves oval, dentate, narrowing into the petiole. 6—12 i. Baltimora.

(1) Cynosurus, Ph. (2) Fucus, L. (3) dracunculoides, Ph.

17—2. Chrysopsis. (1) 49. 55.

mariana, W. (E. y. Au. 2f.) villose: leaves sessile, lance-oblong, tapering to the base, obtuse, glandular-toothed, lower ones petioled, serrate: peduncles axillary, corymbed, glandular-hairy. 12—18 i. *S.*

falcata, Ph. (y. S. 2f.) woolly: leaves sessile, linear, very acute: sub-falcate, spreading, nerves hairy both sides: peduncles few, axillary, corymbed: calyx and peduncles villose. 5—6 i. *S.*

graminifolia, Mx. (y. S. 2f.) silky, leaves lanceolate-linear, acute, entire, nerved: corymb compound: stem leafy towards the summit. Var. *tenuifolia*, silky or woolly: leaves narrow-linear, shining: stem few-flowered: scales of the calyx glabrous. 2 f. *S.*

scabra, Ph. (W. y. Oc. 2f. or ♂.) hispid-pilose, very scabrous: radical leaves oval, toothed, petioled; cauline ones cordate, ovate, sessile: flowers in panicles. 2—3 f. *S.*

argentea, P. (E. y. 2f.) silky: leaves lanceolate, 3-nerved, erect, entire, acute, zigzag: corymb sub-compound, erect: scales of the calyx flat, pubescent. 2 f. *S.*

Southern.

pinifolia, E. (E. y. S. Oc. 2f.) very glabrous: stem rigid: leaves linear, crowded, rigid: corymb large; scales of the involucre woolly at the summit. 18—24 i.

trichophylla, N. (E. y. Au. 2f.) hairy: leaves oblong, obtuse, very entire, somewhat clasping, scabrous on the margin: corymb simple; scales of the involucre very narrow, glandular. 12—18 i.

gossypina, Mx. (E. y. S. 2f.) woolly, hoary: leaves sessile, oblong, spatulate, obtuse, very entire: corymb fastigiate. 1—2 f.

dentata, E. (E. y. S. 2f.) lanuginous: leaves cuneate, obovate, obtuse, deeply toothed; upper ones oblong, oval, entire: corymb simple. 2 f.

divaricata, N. (E. y. S. 2f.) leaves linear-lanceolate, acute, serrate, and with the stem hispid: panicle divaricate: peduncles and calyx viscid-pubescent. 2 f.

villosa, Ph. (2) (W. y. 2f.) hirsutely villous: leaves sessile, entire, linear-oblong, acute, ciliate below; margin scabrous: branches sub-corymbose: flowers fastigiate.

ericoides, T. & J. (W. y.) stem branching below; branchlets elongated, subsimple, 1-flowered: leaves subulate, imbricate, appressed, hispid and ciliate. 5—6 i.

Note. The following species of Aster, according to Nuttall, belong to this genus. A. *linariifolius*, L. *linifolius*, W. *dichotomus*, E. *albus*, N. *obovatus*, N. *humilis*, W. *amygdalinus*, Lb. Pectis.

8—2. Chrysosplenium. 13. 84.

oppositifolium, (golden saxifrage, water-carpet. O. y-r. M. 2f.) leaves opposite, roundish, slightly crenate, tapering for a little distance to the petiole. In rivulets, springs, &c.

alternifolium, L. (M. 2f.) leaves alternate. Perhaps only a variety of the first. Polygonum.

16—10. Cicer. 32. 93.

arietinum, (chick-pea. ☼.) peduncle 1-flowered: seeds globose, gibbous: leaves serrate. Zornia.

(1) Inula, L. (2) Amellus, Ph.

17—1. Cichorium. 49. 53.

intybus, L. (succory or endive. O. b. Ju. 2f.) flowers axillary, in pairs, sessile: leaves runcinate.

Exotic.

endivia, (garden endive. b. ♂.) peduncles axillary, in pairs; one long, 1-flowered, the other short, about 4-flowered: leaves oblong, denticulate. Var. *crispum*, has fringed leaves and solitary flowers. Apargia.

5—2. Cicuta. 45. 60.

maculata, W. (O. w. Ju. 2f.) serratures of the leaves mucronate: petioles membranaceous, 2-lobed at the apex. Damp. 3—6 f. *S.*

bulbifera, W. (E. w. Ju. 2f.) leaves ternate and biternate, bulbiferous; leafets linear and linear-lanceolate, remotely toothed. 2—3 f.

Exotic.

virosa, (water hemlock. 2f.) umbels opposite to the leaves: petioles margined, obtuse; leafets ternate, acutely serrate. Root containing a yellow juice. Sison.

Cimicifuga, Macrotys.

17—2. Cineraria. 49. 55.

heterophylla, Ph. (ashwort. y. M. 2f.) downy: radical leaves long-petioled, obovate-spatulate; also ovate, acutish and pinnatifid; cauline 2—3, linear, pinnatifid: flowers corymbed. 8 i.

canadensis, W. (E. 2f.) villose: leaves pinnatifid, sub-villose; divisions sinuate: flowers panicled.

Southern.

integrifolia, var. *minor*, W. (O. y. Au. 2f.) woolly-tomentose: stem simple lower leaves spatulate, sub-dentate; upper ones narrow-lanceolate, very entire, erect: flowers somewhat umbelled. Tussilago.

3—2. Cinna. (1) 4—10.

arundinacea, W. (indian reed. E. Au. 2f.) glabrous: panicle large, many-flowered, capillary: leaves broad-linear: one valve somewhat awned below at the apex. 2—5 f. *S.* Polypogon.

2—1. Circaea. 48. 33.

lutetiana, var. *canadensis*. L. (O. Ju. w. 2f.) stem erect: leaves ovate, remotely toothed, opaque, smooth. 12—18 i. *S.*

alpina, L. (O. r-w. Au. 2f.) stem branched, glabrous, often procumbent: leaves broad-cordate, membranaceous, acutely toothed, shining. 6—8 i. *S.* Anthoxanthum.

Circium, Cnicus.

Cissus, Ampelopsis.

12—1. Cistus. (2) 20. 80.

canadensis, W. (rock rose, frost plant. O. y. J. 2f.) without stipules, erect; leaves alternate, erect, linear-lanceolate, flat, tomentose beneath: racemes terminal, few-flowered; divisions of the calyx broad-ovate-acuminate: cap-

(1) Agrostis, Lk. Ph. (2) Helianthemum, Ju.

sules shorter than the calyx. At the foot of the Pine-rock, New-Haven, the barren plains produce great quantities of this plant. In Nov. and Dec. of 1816, I saw hundreds of these plants sending out broad, thin, curved ice crystals, about an inch in breadth, from near the roots. These were melted away by day, and renewed every morning, for more than 20 days in succession. 6—14 i. *S.*

ramuliflorum, Mx. (O. y. Ju. 2.) without stipules, erect, powdery-tomentose: leaves alternate, oblong, acute, revolute at the margin, tomentose beneath. racemes short, about 3-flowered at the summit; divisions of the calyx orbicular, pulverulent: capsule globose, of the length of the calyx. 6—10 i. *S.*

corymbosum, Mx. (E. J. 2.) without stipules, erect, ramose, minutely pubescent: leaves alternate, lanceolate, whitish downy beneath: corymb fastigiate, with numerous crowded flowers; divisions of the calyx ovate, acute: capsule scarcely longer than the calyx. 12 i. *S.*

Southern.

rosmarinifolium, Ph. (E. y. Ju. 2.) without stipules, simple, stiffly erect, hoary: leaves linear, revolute at the margin, hoary-tomentose beneath: little racemes axillary; flowers interruptedly crowded: divisions of the calyx ovate, acute: petals thrice as long as the calyx.

carolinianum, Mx. (E. J. 2.) without stipules, hirsute, erect: leaves alternate, oblong-oval, sub-denticulate; bottom ones obovate, hirsute on both sides: peduncles few, terminal, with the calyx very villose: divisions of the calyx oblong, acute, shorter than the petals. Hudsonia.

12—1. CITRUS. 18. 70.

Exotic.

medica, W. (lemon tree. w. J. ☽.) leaves ovate, acuminate, with linear wingless petioles. Var. *limon*, (lime tree) bears smaller fruit, which is almost round. 4—10 f.

aurantium, W. (orange tree. w. ☽.) leaves oval, acuminate, with the petioles winged or margined. Bejaria.

8—1. CLARCKIA. 17. 83.

Southern.

pulchella, Ph. (W. r. p. J. ♂.) stem erect, terete, somewhat branching above: leaves alternate, linear, entire, glabrous: flowers axillary towards the top of the stem, sub-sessile, large. 12—18 i. Menziesia.

21—6. CLAVARIA. 58. 1.

1. *Corol-like; clavate pileus branched.*

(Stems or stipes very thick.)

formosa, very branching: stem sub-decumbent, thick, white: branches elongated, rose-orange; branchlets obtuse, becoming yellow. In groves.

flava, stem thick, white: branches and branchlets straight, shortish, yellow. In autumn it grows in shady woods, about 3 inches long.

botrytis, sub-deformed: stem very thick, decumbent, becoming palish-white: branches shortish, sub-rugose; branchlets obtuse, red. On fallen trees, &c.

(Stems slender, or not so thick as to equal all the branches taken together.)

palmata, somewhat winged or wing-like, becoming pale: stem slender: branches sub-compressed, palmate. About 3 inches long, and the breadth about the same.

vermiculata, sub-ramose, yellow: stem slender, elongated, twice ternately divided in forks; branchlets acute. Branches mostly compressed; branchlets a little woolly. In woods, one and a half inch long.

byssiseda, various, sub-ramose, small, pale, reddish-yellow; rootlets byssus-like or flax-like, white, sessile or sitting down. Springs up among fallen leaves, &c.

muricata, in groups, minute, simple and ramose, white: apex ochre-colour: sitting down with a tomentose base. On decaying trunks, &c. about the fourth of an inch long; substance tough.

cornea, in groups, minute, viscid, becoming yellow, simple and ramose; connate at the bases. On trunks in autumn, scarcely the fourth of an inch long.

2. *Simple; the clavate pileus not branched.*

ligula, sub-cespitose, pale-reddish-yellow, opake, various, villous and slender at the base, terete or sub-compressed at the apex. Adhering to branches, &c. about 2 inches long.

pistillaris, solitary, large, thick, from yellow becoming a little reddish; round at the apex. Nearly cylindric at first, and becoming thick and sub-rugose. Has a bitter taste.

fasiformis, cespitose, heaped together, orange: clavate pileus attenuated, sub-tenacious, cohering at the base. In woods.

flavipes, cespitose, fragile: clavate pileus sub-falcate, acuminate, pale-approximate at the base: shining, yellow.

cirrhata, cespitose, crowded, fragile, snow-white. In shady woods on the earth. Very variable: but distinguished by being white and fragile.

herbarum, in groups, minute, lanceolate, sub-tenaceous, becoming dark-olive. Hardly belongs to this genus. About one sixth of an inch long, on leaves and other herbage.

muscicola, very minute, white, sub-incrassate, curved, all glabrous; sitting down with globose tubercles.

gyrans, on leaves; wholly white, filiform: stipe with long pubescence. In autumn. Stipe white, weak. Geoglossum.

5—1. CLAYTONIA. 13. 86.

virginica, L. (O. w. r. A. 2f.) leaves linear-lanceolate: petals obovate, retuse: leaves of the calyx somewhat acute: root tuberous. Var. *latifolia*, T. (1) leaves ovate-lanceolate: leaves of the calyx obtuse. 6—12 i. *S.*

Southern.

lanceolata, Ph. (W. w. J. 2f.) leaves lanceolate; cauline ones ovate, sessile: raceme solitary, elongated: leaves of the calyx short, obtuse: petals wedge-form, 2-cleft: root tuberous.

alsinoides, Sims. (W. w. J. ☼.) radical leaves spatulate-ovate; cauline ones ovate, distinct: racemes somewhat in pairs: flowers secund: bracts ovate and linear: petals emarginate: root fibrous.

perfoliata, Donn. (W. w. M. ☼.) radical leaves spatulate-rhomboid; cauline ones roundish, perfoliate: raceme sub-solitary, without bracts: root fibrous: petals emarginate. Ceanothus.

12—13. CLEMATIS. 26. 61.

virginica, (virgin's bower. O. w. Ju. ♄.) climbing: leaves ternate: leafet ovate, sub-cordate, gash-toothed and lobate: flowers panicled, dioecious 15—20 f. *S.*

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(1) C. caroliniana, Mx. spathulaefolia, Ph. spatulata, 4th Ed.

viorna, W. (leather flower. E. b. J. ♄.) climbing: leaves compound and decompound; leafets lance-oval, acute at both ends, trifid and entire: flowers solitary, bell-form: petals thick, leathery, acuminate. *S.*

ochroleuca, Hort. Kew. (1) (w. & y. J. 2ℓ.) erect, simple, pubescent: leaves simple, ovate, entire; young ones and calyx silky: flower terminal, peduncled, solitary, nodding. 12 i. *S.*

Exotic.

flammula, (sweet virgin's bower. ♄.) lower leaves laciniate; upper ones simple, entire, lanceolate.

viticella, (purple virgin's bower. p. Ju. 2ℓ.) climbing: leaves compound and decompound; leafets oval, sub-lobate, entire: petals obovate, spreading.

Southern.

cordata, Ph. (A. w. Ju. ♄.) climbing: leaves pinnate in two pairs; leafets cordate, lobed, acuminate, gash-toothed; teeth mucronate: racemes compound, elongated, many-flowered: stamens and petals about equal: flowers dioecious.

holosericea, Ph. (E. w. ♄.) climbing: leaves divided, ternate; segments oblong-lanceolate, entire, pubescent on both sides: corymbs trichotomous, few-flowered, dioecious: petals linear, longer than the stamens. Whole plant silky.

walteri, Ph. (E. w. ♄.) climbing: leaves divided, pinnate; leafets in 3 pairs, divaricate, petioled, cirrhose, linear-lanceolate, acute, entire, glaucous beneath: flowers solitary: petals elliptic, twice as long as the stamens.

crispa, W. (E. p. Ju. ♄.) climbing: leaves pinnate and ternate; leafets divaricate, ovate-lanceolate, acute, 3-lobed or entire: flowers solitary, bell-form; petals acuminate, revolute; margins undulate: awns of the seed subulate, naked.

cylindrica, Sims. (E. p-b. Ju. ♄.) climbing: leaves pinnate, decompound; leafets ovate, acute at each end, glabrous, simple, petioled: peduncles terminal, solitary: corol nodding, cylindrical: petals coriaceous, undulate: awns of the seed plumose.

reticulata, Wr. (O. p-r. Ju. ♄.) climbing: leaves pinnate in 4 pairs; leafets ovate, obtuse at each end, all entire, petioled, membranaceous, reticulately nerved on both sides: flowers solitary; petals coriaceous: awns of the seed plumose.

hirsutissima, Ph. (W. M. 2ℓ.) erect, simple: leaves very hirsute, bipinnatifid, gashed; divisions linear, acute; cauline leaves compoundly multifid: peduncle terminal, solitary: flower erect, bell-form; petals 4, erect, ovate, somewhat obtuse, reflexed at the apex.

catesbyana, Ph. (E. ♄.) climbing, pubescent: leaves biternate; leafets subcordate, 3-lobed: panicle divaricate-dichotomous: petals longer than the stamens. Flowers often dioecious.

ovata, Ph. (E. 2ℓ.) erect, simple: leaves ovate, gradually acute, short-petioled, glabrous, reticulate-nerved on both sides; lower ones sub-cordate: peduncle terminal, solitary, 1-flowered: plumose awns very long.

linearifloba, Dc. (E.) peduncles 1-flowered: petals very acute: leaves divided, pinnate, glabrous; leafets entire or 3-parted. Atragene.

6—1. CLEOME. 25. 64.

pentaphylla, W. (E. w. Ju. ☼.) smoothish: leaves quinate and ternate; leafets entire, sub-serrulate: stamens inserted on the pedicel of the germ. 2 f. *S.*

dodecandra, W. (2) (O. r-w. Ju. ☼.) viscid-pubescent: leaves ternate; leafets elliptical-oblong: flowers generally dodecandrous. 1 f. *S.*

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(1) sericea, Mx. (2) Polanisia graveolens, T.

Southern.

serrulata, Ph. (W. p-w. Au. ☼.) glabrous: leaves ternate; leafets lanceolate, obsoletely serrulate: raceme elongated, bracts linear: stamens 6. 3—4 f.

pinnata, Ph. (W. y.) sub-pubescent: leaves pinnate; leafets lanceolate, attenuate below, sparingly dentate, upper ones confluent: flowers racemed, pedicelled, aggregated. 2 f.

cuneifolia, M. (E. w. Ju. ☼.) leaves simple, sub-sessile, obovate-cuneate: flowers hexandrous, in terminal clusters. 12—18 i.

mexicana, Dc. (1) (W. y.) stem herbaceous, branching, smooth, unarmed; branches obtusely angular: leaves terrete, smooth, petioled; leafets lanceolate, acutish, entire: racemes corymbose, terminal. Tillandsia.

10—1. CLĔTHRA. 18. 51.

alnifolia, W. (E. w. Au. ♄.) leaves wedge-obovate, acute, coarse-serrate, glabrous, both sides one colour: racemes spiked, simple, bracted, hoary-tomentose. 4—8 f. *S.*

Southern.

tomentosa, Lk. (E. w. Au. ♄.) leaves cuneate-obovate, acute, sub-serrate, white tomentose beneath: racemes spiked, simple, bracted, villous-tomentose. 2—4 f.

scabra, P. (E. w. Ju. ♄.) leaves broad-wedge-obovate, acute, coarse-serrate, scabrous on both sides; serratures uncinate; racemes spiked, sub-panicled, bracted, sub-tomentose.

paniculata, W. (E. w. Ju. ♄.) leaves narrow-wedge-lanceolate, glabrous on both sides, acute, serrate; serratures acuminate: panicle terminal, racemose, white-tomentose.

acuminata, Mx. (A. w. Au. ♄.) leaves oval, acuminate, serrate, glabrous on both sides, glaucous beneath: racemes spiked, bracted, white-tomentose. Ruta.

21—2. CLIMACIUM. 56. 4.

dendroides, (2) (tree moss.) stem branching, tree-form: leaves crowded, erect, lanceolate, sub-3-nerved, serrulate above: capsule erect, long-cylindric: inner peristome at length multifid-capillaceous. Leskia.

13—1. CLINOPODIUM. 42. 39.

vulgare, W. (field thyme. O. r-w. Ju. 2ſ.) flowers in head-form whorls: bracts setaceous, hispid; leaves above pilose, remotely toothed: stem simple. 2 f. Origanum.

17—1. CNICUS. (3) 49. 54.

lanceolatus, L. (common thistle. O. p. J. ♂.) leaves decurrent, hispid, pinnatifid: divisions 2-lobed, divaricate, spinose: calyx ovate, with spider-web-like pubescence: scales lanceolate, spinose, spreading. 2—4 f. *S.*

altissimus, L. (4) (tall thistle. O. w-p. Au. 2ſ.) leaves sessile, lance-oblong, scabrous, downy beneath, toothed, ciliate; radical ones pinnatifid; calyx bracted, ovate: scales lance-ovate, spinose, close-pressed. 3—8 f. *S.*

arvensis, W. (5) (canada thistle. O. p. J. 2ſ.) leaves sessile, pinnatifid, ciliate, spinose: stem panicled: calyx ovate, mucronate: scales broad-lanceolate, close-pressed; margin woolly. 2—3 f.

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(1) Cleomella, Dc. (2) Leskea dendroides, Mx. (3) Carduus, L. in some of his works. Cirsium, Mx. (4) virginianus, Wr. repandum, Mx. (5) Carduus, S. Serratula, W.

horridulus, Mx. (1) (E. w-y. Ju. 2f.) tall: leaves sessile, pinnatifid, acutely-gashed, very spinose: involucre terminal, 1-flowered, many-leaved; leafets very spinose, double: calyx unarmed. 2—3 f. *S.*

altilis, Mx. (O. p. Ju. ♂.) leaves all pinnatifid, woolly beneath: divisions sub-lanceolate, acute, a little spinose: branches at the summit many, nakedish, 1-flowered: calyx globose: scales not spinose. 3—4 f. *S.*

discolor, M. (O. p. Ju. ♂.) leaves sessile, pinnatifid, rough-haired, downy beneath; divisions 2-lobed, divaricate, spinose: calyx globose, with spider-web-like pubescence: scales ovate, close-pressed, with spreading spines at the tips. 3—5 f. *S.*

virginianus, W. (A. p. Ju. 2f.) stem simple: leaves sessile, lanceolate, hoary-tomentose beneath, remotely toothed; teeth spinous: flowers solitary: calyx globose; scales mucronate, appressed, carinate. 3—5 f. *S.*

odoratus, M. (2) (E. r. Ju. 2f.) woolly: stem 1 to 3-flowered: leaves clasping, lance-oblong, pinnatifid; segments irregularly lobed, ciliate, tipped with spines; colour similar both sides: calyx large, sub-globose, naked; scales close-pressed, lanceolate, acuminate, spinose. 1—2 f.

glutinosus, Bw. (E. p. Au. ♂.) leaves pinnatifid, segments divaricate: calyx ovate; scales unarmed, glutinous. 4—6 f.

undulatus, N. (W. r-p.) leaves clasping, pinnatifid-sinuate, undulate; segments bifid, spiny; both sides tomentose: calyx sub-globose; scales lanceolate mucronate. 1—2 f. *S.*

pitcheri, T. (W.) cottony-pubescent: leaves very long-linear, pinnatifid (almost pinnate) sub-decurrent; radical ones sheathing the base of the stem: leafets very remote, linear, terminated with slender spines; terminal leafets broadest, sometimes branching: calyx globose: scales lanceolate, keeled, spinose; spines reflexed. First found by Dr. Zina Pitcher, on the great sand banks of Lake Superior. My specimen was collected by Dr. E. James, at Lake Huron, from which I made this description, not having seen Dr. Torrey's. It is 18 inches high.

glaber, N. (E. p. Ju. 2f.) leaves sessile, pinnatifid, all over smooth; segments spinose, acute, lower ones sub-decurrent: calyx ovate, glabrous; scales spineless, short-mucronate, obtusely carinate: stem much branched. 4—6 f. *S.*

Southern.

repandus, Mx. (E. p. Ju. 2f.) leaves amplexicaule, narrow, oblong, obtusely sub-sinuate, with numerous small spines, lanuginous: flowers solitary; scales of the calyx lanceolate, erect, spinous. 2 f. Carduus.

5—2. CNIDIUM. (3) 45. 60.

canadense, Mx. (E. w. Ju. 2f.) stem angular, flexuous: leaves bipinnate; leafets many-parted; segments lanceolate. *S.*

atropurpureum, Lk. (E. p. J. 2f.) radical leaves subcordate, simple, serrate; cauline ones serrete; leafets ovate, acute, sub-cordate; middle one petiolate: partial involucre dimidiate, 3-leaved. Pursh says all the leaves are ternate. 2—3 f. *S.*

Southern.

acaule, Ph. (W. 2f.) glabrous, stemless: leaves bipinnate; leafets linear, upper ones confluent: scape shorter than the radical leaves: partial umbels of the ray staminate. 2—3 i. Pastinaca.

14—1. COCHLEARIA. 39. 63.

fenestrata, Br. (arctic region.) stem simple: leaves ovate-deltoid; petiole broad.

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(1) spinosissimus, Wr. Serratula discolor, Lk. (2) pumilus, N. (3) Selinum, L.

aquatica, Ea. (water horse-radish. w. J. 2f.) leaves all pinnatifid; lower ones doubly and finely pinnatifid. Grows in Pittsfield, Mass. in water and wet grounds. Manifestly indigenous; but perhaps a variety of *armoracia*.

Exotic.

officinalis, (scurvy-grass. w. J. 2f.) radical leaves roundish; cauline ones oblong, sub-sinuate: silicles globose.

armoracia, (horse-radish. w. J. 2f.) radical leaves lanceolate, crenate; cauline ones gashed. Naturalized. Lunaria.

19—3. Coix. 4. 10.

lachryma, (job's-tear. Ju. ☉.) culm semi-terete above: flowers naked: fruit ovate. Zea.

21—5. Collema. 57. 2.

nigrum, frond crust-like, sub-orbicular, dark-tawny; lobes gash-crenate all around the periphery, the central ones sub-ramose, and in the form of grains: receptacles at length convex, black, marginated. On stones.

pulposum, frond sub-orbicular, formed of thick, sub-imbricate, repand-crenate, plicate, naked, lobes: receptacles central, crowded, flattish, reddish-yellow, with elevated entire margins.

papulosum, frond orbicular: central lobes thick, entangled, irregular: those of the periphery expanded, dilated outwardly, gash-crenate, warty-blistered above.

pallescens, frond yellowish-green, pale beneath: lobes deformed, densely entangled, irregularly crenate, ascending: receptacles sub-marginal. A variety of the tenax.

myriococcum, frond sub-orbicular, imbricate, black; lobes crowded, entangled, crisped, granulate; receptacles minute, globose-turbinate, heaped together, marginal and scattered, one-coloured, marked with punctures. Among and on mosses on rocks, &c.

palmatum, frond sub-foliaceous, tawny-green, becoming glaucous: lobes thick, crowded, gash-palmate; divisions sub-linear, terete: receptacles red-tawny. On the earth and trunks.

nigrescens, frond foliaceous, membranaceous, sub-monophyllous, orbicular, depressed, radiately-plicate, round-lobed, dark-green: receptacles central, crowded, at length convex, red-tawny, margins entire. On roots of trees, rocks, &c. Halsey.

pulchellum, frond foliaceous, membranaceous, orbicular, flat, sub-laciniate, round-lobed at the periphery, plicate-papulose above, dark-green, paler beneath and deeply lacunose: receptacles scattered, crowded, elevated: disk urceolate, pale wax-colour; margin thin, contracted, entire, at length sub-rugose.

furvum, frond foliaceous, membranaceous, sub-rugose, complicate, dark-green, granulated both sides: lobes round-deformed, afterwards undulate, crisped, entire: receptacles scattered, flat, dark-tawny; margins entire. Trunks, &c.

tremelloides, frond foliaceous, membranaceous, very tender, sub-diaphanous, lead-colour, obsoletely rugose and marked with dots; lobes oblong, round, gashed, entire: receptacles scattered, flat, red-tawny, at length black; margin pale. Trunks among moss, &c.

lacerum, frond foliaceous, membranaceous, sub-diaphanous, sub-rugose-reticulate, becoming glaucous; lobes small, sub-imbricate, laciniate, tooth-ciliate: receptacles scattered, a little concave, red; margin pale.

Cornicularia.

13—2. Collinsia. N. 40. 40.

verna, (collinsia. O. b. M. ☼.) leaves opposite and whorled, obtuse, entire; peduncles axillary, whorled, single-flowered. 12 i. *S.* Gerardia.

2—1. Collinsonia. 42. 39.

canadensis, (horse-balm, rich-weed. O. y. Au. 2f.) leaves heart-ovate, broad, glabrous: teeth of the calyx short-subulate: panicle terminal, compound. Var. *cordata*, leaves broad-cordate, upper ones entire. Var. *ovata*, leaves ovate, attenuate at the base, all serrate. Strong scented, not unpleasant. 1—3 f. *S.*

Southern.

scabra, Ph. (E. r-y. Au. 2f.) leaves small, ovate, sub-cordate, somewhat hairy: teeth of the calyx short, subulate: panicle terminal, simple: stem hairy, rough. 2—3 f.

ovalis, Ph. (E. y. Au. 2f.) leaves oblong-oval, acute at each end, glabrous: petioles long: teeth of the calyx short: panicle terminal, simple, naked: stem glabrous.

tuberosa, Mx. (E. y. S. 2f.) leaves somewhat rhomboid-oval, acute at each end, glabrous: teeth of the calyx setaceous, longer than the tube: panicle compound, leafy: stem branching, somewhat hairy. 3—4 f.

anisata, Sims. (A. y. Au. 2f. leaves ovate, cordate, rugose, glabrous; nerves pubescent beneath: teeth of the calyx linear, nearly as long as the tube: panicle leafy, compound, pubescent: flowers tetrandrous: stem branching, pubescent.

punctata, E. (E. y. S. 2f.) leaves ovate-lanceolate, acuminate, acute at the base, pubescent and dotted beneath: panicle compound. 2—6 f.

verticillata, Bald. (E. M.) leaves verticillate, oval and acuminate. Var. *purpurascens*, flowers purplish; panicle short. 1 f. Rosmarinus.

5—1. Collomia. N. (1) 29. 44.

Southern.

linearis, Cav. (W. w-p. J. ☼.) sub-pubescent: leaves oblong-linear, sub-lanceolate; floral ones ovate-lanceolate, acute: bracts and calyx viscid. 4—12 i. Cantua.

16—10. Colutea. 32. 93.

arborescens, (bladder senna. y. ♄.) leaves pinnate; leafets oval, retuse: banner gibbous, abbreviated.

vesicaria, (senna herb. y. Ju.) leaves pinnate; leafets ovate: stem herbaceous, decumbent, villose: legumes orbicular, inflated. Indigofera.

Comandra, Thesium.

11—13. Comarum. (2) 35. 92.

palustre, W. (marsh five-finger. O. Ju. 2f.) leafets in threes, fives and sevens, serrate: stipules growing to the petioles and sheathing: flowers axillary and terminal: stem rooting. An active astringent. 18 i. *S.* Fragaria.

3—1. Commelina. 6. 13.

angustifolia, Mx. (day-flower. E. b. Ju. 2f.) assurgent, weak, somewhat gla-

(1) Taken from Phlox. (2) Potentilla, T.

brous : leaves lance-linear, very acute, flat, glabrous : sheaths sub-cilliate : bracts (or involucres) peduncled, solitary, short-cordate. 12 i. *S.*

virginica, L. (1) (b. Ju. 2f.) stiffly erect, all over pubescent : leaves long-lanceolate ; sheaths red-bearded at the throat : bracts (or involucres) sub-sessile, lateral and terminal : calyx petal-like, 3-leaved, nearly equal. 2 f. *S.*

Southern.

communis, L. (E. b. Au. ✿.) corol unequal : leaves ovate-lanceolate, acute : stem creeping, glabrous. Xyris.

19—3. Comptonia. 50. 99.

asplenifolia, A. (sweet fern. O. g. Ap. ♄.) leaves long-linear, alternately crenate-pinnatifid. 18—48 i. *S.* Coix.

21—4. Conferva. 57. 2.

1. *Coloured,* (not green) *ramose.*

rufa, threads ramose, capillary, straight, obsoletely geniculate ; branches and branchlets opposite, remotish : length of the joints equalling the diameter. In the sea. Reddish-yellow, shining, in fascicles : threads of the thickness of human hair, 2 inches and longer, flaccid, soft.

2. *Coloured, simple.*

fucicola, threads simple, cylindric, fascicled : joints twice as long as thick. In bays, &c. fascicled like a pencil-brush, an inch or an inch and a half, yellow-ferruginous.

3. *Green, simple.*

floccosa, threads simple, spider-web-like, woven into a bullate stratum : joints with the length and diameter equal. In ditches and slow-flowing streams, frequent early in the spring, yellowish-green. Adheres to paper or leaves.

capillaris, threads simple, variously reflexed and loosely interwoven : joints when dry alternately compressed : granulations scattered. Common in still water. Joints vary in length. Hardly adheres to paper ; obscure green.

vesicata, threads simple, slender : joints six times as long as thick ; in some parts globose-inflated. Var. *fuscescens*, sooty-yellow.

fontinalis, threads simple, adnate, fascicled, straight, obtuse : joints thrice as long as thick. In limpid fountains, bright-green. Hardly adheres to paper when dry.

linum, threads simple, filiform, very long, variegated and equal when dry : diameter of the joints about equalling the length. In salt water ditches. Will not adhere to paper.

rivularis, threads simple, capillary, very long, straight, equal : knee-joints pellucid, joints bearing grains, diameter about one third their length, alternately compressed when dry. In rivers, summer and autumn. Obscure green, more slender than human hair. Var. *crispata*, has ramose threads.

4. *Green, ramose and sub-mersed.*

fracta, threads rigid, very branching, capillary ; branches divaricate, alternate : joints five times as long as thick. Common in ditches, large.

glomerata, threads very branching, capillary : branches alternate, terminal ones fastigiate, somewhat 1-sided : joints cylindric, four times as long as thick. Common in rivers and lakes. Adheres slightly to paper.

rupestris, threads fascicled, very branching, straight, wand-like, obtuse : branches erect : knee-joints pellucid ; joints cylindric, thrice as long as

(1) Hirtella, Vahl.

thick. In the sea and bays. Threads from 3 inches to a hand's breadth in length. Does not adhere to paper when dry.

5. Green, ramose and emersed.

velutina, threads creeping, rooting ; fibrils flexuose, hyaline, ramose ; branches erect, obtuse, interwoven into a veil-like tissue : upper joints double the length of the diameter. On the naked earth. Zygnema.

5—2. CONIUM. 45. 60.

maculatum, L. (poison hemlock. O. w. Ju. 2f.) stem very branching, spotted : leaves very compound : seed striate. Var. *crispatulum*, leaves crisped : ultimate divisions acuminate, or terminated in a bristle. 2—4 f. *S.* Sium.

21—6. CONOPLEA. 58. 1.

sphaerica, in groups, sub-confluent, becoming a dark-olive, tubercled or sub-granulated, spherical. On deciduous branches in dense masses. Cyathus.

6—1. CONOSTYLIS. 10. 17.

americana, Ph. (1) (weed-grass. E. y. Ju. 2f.) corol woolly within : scape corymb-panicled : leaves grass-ensiform, glaucous : filaments equal. 12—18 i. *S.* Aletris.

6—I. CONVALLARIA. 11. 12.

1. *Corol deeply 4-parted, spreading : stamens 4 : berry 2-celled. (Flowers in a terminal raceme.)* MAJANTHEMUM, D.

bifolia, L. (2) (dwarf solomon seal. O. w. Ju. 2f.) stem with two heart-oblong, sub-sessile, glabrous leaves : raceme simple, terminal : flowers tetrandrous. Var. *trifolia*, stem 3-leaved. 4—6 i.

2. *Corol 6-parted, spreading : filaments divergent attached to the base of the segments. (Flowers in a terminal raceme.)* SMILACINA, D.

stellata, L. (O. w. M. 2f.) stem with alternate, clasping, oval-lanceolate leaves : raceme simple, terminal. 8—18 i.

trifolia, L. (O. w. J. 2f.) stem about 3-leaved : leaves alternate, ovate-lanceolate, contracted at the base : raceme simple, terminal, few-flowered. 6—10 i.

ciliata, D. (w. 2f.) stem arched : leaves alternate, sessile, ovate, ciliate : panicle terminal, crowded. *S.*

racemosa, L. (spiked solomon seal. O. y-w. M. 2f) stem with alternate leaves : leaves sessile, oblong-oval, acuminate, nerved, pubescent : flowers in a terminal raceme-panicle. 18—24 i. *S.*

3. *Corol sub-campanulate, deeply 6-parted : style elongated : berry 2-celled, many seeded.* DRACAENA, D. & W.

borealis, W. (wild lily of the valley, or dragoness-plant. O. g. y. J. 2f.) subcaulescent : leaves oval-obovate ; margin ciliate : scape pubescent : umbel few-flowered, sub-corymbed, sometimes proliferous ; pedicels naked, nodding. 6 i.

umbellata, Mx. (A. w. Ju. 2f.) leaves radical, oblong-oval, with the margin and keel ciliate : scape pubescent : umbel terminal ; pedicels bracteate. Torrey says, keel not ciliate : flowers greenish-yellow. 8—12 i. *S.*

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(1) Helonias tomentosa, M. (2) Smilacina canadensis, Ph.

4. *Corol 6-cleft, cylindric : filaments inserted on the upper part of the tube : berry 3-celled ; cells 2-seeded. (Flowers axillary.)* POLYGONATUM, D.

multiflora, L. (giant solomon seal. E. w. Ju. 2f.) stem terete : leaves alternate, clasping, oblong-oval : peduncles axillary, some of them many-flowered. 2—3 f. *S.*

biflora, Wr. (E. g-y. J. 2f.) stem terete, smooth : leaves alternate, sessile, elliptic-lanceolate, 3-nerved : peduncles axillary, solitary, few-flowered. 12—18 i. *S.*

pubescens, W. (O. w. M. 2f.) stem teretish, furrowed : leaves alternate, clasping, ovate, pubescent beneath : peduncles axillary, about 2-flowered. 18 i. *S.*

canaliculata, W. (clasping solomon seal. w. Ju. 2f.) stem channelled : leaves alternate, clasping, oblong, margin pubescent : peduncles axillary, about 2-flowered. *S.*

latifolia, (J. 2f.) stem angled : leaves sessile, ovate, acuminate : peduncles 1 or many-flowered. 4 f. *S.*

hirta, Lk. (2f.) stem angular, hispid : leaves alternate, somewhat clasping, ovate, abruptly acuminate : peduncles axillary, 3-flowered.

Southern.

majalis, W. (lily of the valley. A. w. J. 2f.) scape naked, smooth : leaves oval-ovate. Asparagus.

5—1. CONVOLVULUS. 29. 43.

repens, L. (1) (field bind-weed. O. w. & r. J. 2f.) twining : leaves sagittate, with the apex acute and the lobes truncate, entire (some obtuse :) bracts acute, longer than the calyx, and shorter than the middle of the corol : peduncle angled, exceeding the petiole. *S.*

arvensis, L. (2) (E. w. J. 2f.) stem climbing or prostrate : leaves sagittate ; lobes acute, spreading : peduncles about 1-flowered : bracts minute, acute. *S.*

panduratus, Mx. (mechoacan. E. w. & r. Ju. 2f.) twining, pubescent : leaves broad-cordate, entire or lobed, guitar-form : peduncles long : flowers fascicled : calyx glabrous, awnless : corol tubular-bell-form. A mild cathartic, and resembles rhubarb in its effects. B.

spithameus, L. (3) (E. w. J. 2f.) erect : leaves oval, or oblong, sub-cordate, pubescent : peduncles 1-flowered, generally longer than the leaves. 9—12 i. *S.*

Exotic.

batatus, (sweet potatoe, carolina potatoe. w-r. Ju. 2f.) creeping, tuberous : leaves cordate, hastate, angular-lobed, 5-nerved, smoothish : peduncles long : flowers fascicled : corol sub-campanulate. Cultivated.

purpureus, Ph. (4) (common morning glory. b. p. J. ☼.) pubescent : leaves cordate, entire : peduncles 2 to 5-flowered : pedicels nodding, thickened : divisions of the calyx lanceolate : capsules glabrous. Cultivated.

tricolor, (3-coloured bindweed. Ju. ☼.) leaves lance-ovate, glabrous : stem declined : flowers solitary.

Southern.

macrorhizus, Mx. (5) (E. w. J. 2f.) pubescent : leaves cordate, entire and lobed, rugose-plaited, downy beneath : peduncles 1 to 5-flowered : flowers sub-campanulate : root very thick.

tenellus, (6) (E. w. Ju. 2f.) stem prostrate : leaves elliptic, mucronate, sub-cordate ; peduncles many-flowered, longer than the leaves : style 2-parted.

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(1) sepium, W. L. (2) sagittifolius, Mx. E. speciosus, Wr. (3) Calystegia tomentosa ? Ph. C. stans ? Mx. (4) Ipomea, Ph. (5) Ipomea jalapa, Ph. Ipomea, Mx. C. jalapa ? L. (6) trichosanthes, Mx. Ph.

aquaticus, Wr. (1) (E. w. J. 2f.) stem prostrate : leaves oblong-ovate, nearly sessile : peduncles generally3-flowered, three times as long as the leaves . style 2-parted.

obtusilobus, Mx. (E. y. & w. S. 2f.) stem prostrate : leaves thick, sinuate, lobed, emarginate ; lobes rounded : peduncles 1-flowered.

catesbeianus, Ph. (E. p.) twining, tomentose : leaves oblong, sagittate, acuminate : peduncles 1-flowered, shorter than the leaves : bracts oval, obtuse, longer than the calyx.

paradoxa, Ph. (E. w.) prostrate, tomentose : leaves oblong, cordate-sagittate, acute : peduncles 1-flowered, longer than the leaves : bracts linear, remote from the flowers : calyx naked, glabrous, acuminate.

sherardi, Ph. (E. ☼.) prostrate, pubescent : leaves elliptic, retuse at each end, mucronate : flowers solitary, nearly sessile.

tamnifolius, (E. b. S. ☼.) twinining : leaves cordate, acuminate, hairy : flowers clustered. Ipomea.

17—2. Conyza. 49. 55.

marylandica, Mx. (2) (marsh fleabane, plowman's wort. p. Au. ☼.) herbaceous, pubescent : leaves sessile, broad-lanceolate, acute, serrate ; serratures at the apex cartilaginous : corymbs terminal, fastigiate, condensed, almost leafless : scales of the calyx subulate-mucronate : florets short. 12—20 i. *S.*

Southern.

camphorata, Ph. (E. p. Au. 2f.) herbaceous, sub-pubescent : leaves petioled, ovate-lanceolate, very acute, somewhat repand-denticulate, dentures glandular : corymbs terminal and axillary, shorter than the leaves : scales of the calyx acute, about equal to the florets. 3 f.

bifrons, W. (E. y. Ju. 2f.) sub-glutinous : leaves clasping, spatulate-oblong, acute, serrate : corymbs of the panicle glomerate.

pycnostachya, Mx. (black root. E. w. Au. 2f.) stem winged : leaves lanceolate, tomentose beneath, nearly entire : spike cylindric, dense. Gnaphalium.

12—13. Coptis. 26. 61.

trifolia, Sy. (3) (gold thread. O. w. M. 2f.) scape 1-flowered : leaves ternate. Roots long, filiform, golden-yellow. Tonic bitter. B. 2—4 i. *S.*

asplenifolia, Sy. (W. 2f.) leaves biternate ; leafets sub-pinnatifid : scape 2-flowered. Caltha.

18—1. Corallorhiza. (4) 7. 21.

verna, T. (5) (corel root. O. w-y. M. 2f.) petals linear-lanceolate, spreading ; lip oblong without spots, bi-dentate at the base, apex recurved, ovate ; spur obsolete, adnate. 5—6 i.

odontorhiza, W. (corol teeth. O. p. w. Ju. 2f.) lip entire, oval, obtuse ; margin undulate or a little crenate ; spur obsolete, adnate to the germ : capsule sub-globose. 12 i. *S.*

multiflora, T. (6) (p. Au.) scape many flowered, (15—30 :) lip cuneate-oval, 3-parted, recurved, spotted : spur conspicuous, adnate. 12—15 i.

hyemalis, W. (O. g-p. M. 2f.) leaf single, radical, lance-oval, many-nerved nip 3-cleft, not produced at the base. This species belongs to the new genus Aplectrum ; which was left out by mistake. Putty root. Calypso.

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(1) trichosanthes v. patens, Ph. (2) camphorata, M. (3) Helleborus trifolius, L. (4) Cymbidium, W. (5) innata, Br ? (6) innata, Br ?

17—3. Coreopsis. 49. 55.

1. *Leaves opposite and undivided.*

rosea, N. (r. M.) small, smooth: stem simple: leaves linear, entire; axils leafy: flowers few, long-peduncled, dichotomous, terminal; rays unequally 3-toothed. 1 f. *S.*

2. *Leaves opposite, divided.*

trichosperma, Mx. (E. y. Ju. ♂.) glabrous; dichotomous: leaves opposite, quinate-pinnate, lanceolate, serrate: outer leafets of the calyx ciliate serrate: rays entire: seed wedge-form: about 4-toothed. 2 f. *S.*

tripteris, W. (tickseed sunflower. A. y. 2f.) glabrous: leaves petioled, lanceolate, entire; radical ones pinnate; cauline ones ternate: rays entire: seeds obovate, naked at the apex.

3. *Leaves alternate.*

dichotoma, Mx. (1) (O. y. S. ☼.) stem glabrous, nakedish and dichotomous above: leaves mostly alternate, undivided, entire, narrowing into the petiole: seed obovate, 2-bristled, scabrous, with a torn margin. 2—3 f. *S.*

aspera, Ph. (E.) leaves lanceolate-linear, rough; upper ones alternate; lower ones opposite: stem 1-flowered.

Southern.

1. *Leaves opposite, undivided.*

lanceolata, L. (E. y. S. 2f.) leaves sessile, lanceolate-linear, entire, ciliate: peduncles long, naked: seeds orbicular, scabrous, winged, 2-toothed at the summit, emarginate.

crassifolia, A. (O. y. J. 2f.) leaves obovate-oblong, entire, tapering at the base, hirsute: peduncles long, hirsute at the base.

arguta, Ph. (E. y. 2f.) glabrous: leaves petioled, ovate, lanceolate, gradually acuminate, acutely serrate: peduncles axillary and terminal, dichotomous-corymbose.

latifolia, W. (A. y. Au. 2f.) leaves ovate, acuminate, crenate-toothed; teeth mucronate: petioles short: rays entire: seed cuneate, oblong, without wings, naked at the summit.

oemleri, E. (E. y. Au.) leaves broad-lanceolate, sessile, acute at each end, entire: peduncles axillary and terminal, dichotomous-corymbose. 2—3 f.

2. *Leaves opposite, divided.*

aristata, W. (O. y. Au. 2f.) pubescent: leaves quinate, pinnate; leafets serrate: rays entire, broad, oval: seed cuneate-obovate, 2-awned; awns long, divaricate.

pubescens, E. (E. y. Au. 2f.) pubescent: leaves quinate, pinnate: leafets lanceolate, obtuse, entire; lateral ones small: leaves of the exterior calyx ovate-lanceolate: rays undulate? egret 2-leaved, subulate, pubescent. 2 f.

auriculata, W. (A. y. S. 2f.) pubescent: leaves sub-sessile, oval-lanceolate, entire; lower ones ternate: exterior calyx deeply divided: rays 4-toothed seeds obovate, roundish, 2-toothed at the summit. Var. *diversifolia*, E. hairy: radical leaves ternate, leafets round; cauline ones ternate, leafets obovate; upper leaves spatulate-lanceolate: seed roundish, denticulate, 2-toothed at the summit. 3—4 f.

tenifolia, W. (A. y. Au. 2f.) pubescent: leaves sessile, ternate; leafets lanceolate, entire: rays entire: seed cuneate. Var. *rigida*, N. leafets linear-

(1) gladiata, Wr.

lanceolate; margin scabrous: exterior calyx about 12-leaved. 2—3 f.

aurea, W. (y. 2[.) leaves serrate; radical ones 3-parted; cauline ones 3-cleft or entire, lanceolate-linear.

palmata, N. (W. y.) stem simple, 1—3-flowered: leaves sessile, sub-coriaceous, palmate-3-lobed; margin scabrous: double calyx 8-parted: seeds oblong-elliptic, naked. 12 i.

trifida, Lk. (y. 2[.) glabrous: leaves 3-cleft, subulate, fascicled: peduncles terminal, 1-flowered: rays 3-cleft: stem somewhat flexuous.

tenuifolia, W. (A. y. S. 2[.) glabrous: leaves opposite, sessile, ternate; leaflets compoundly many-parted: segments linear, entire: disk one-coloured. 2—3 f.

verticillata, W. (A. y. Au. 2[.) smooth: leaves opposite, sessile, ternate or quinate; leafets linear-lanceolate, entire: rays acute: seed obovate, somewhat 2-toothed. 2—3 f.

mitis, W. (O. y. Au. ♂.) glabrous: leaves bipinnatifid; leafets linear, serrulate: leaves of the external calyx linear, serrulate: seeds oblong, 2-awned. 3—4 f.

3. *Leaves alternate.*

acuta, Ph. (E. y. ♂.) leaves ovate-lanceolate, acute, toothed, somewhat hairy: flowers corymb-panicled.

procera, W. (y. 2[.) leaves elliptic, acuminate, serrate, petioled, veined, decurrent; lower ones verticillate; upper ones alternate.

angustifolia, W. (E. y.) leaves linear-lanceolate, entire, smooth: rays oblong, 3-cleft; middle segment largest.

nudata, N. (E. r.) stem sub-simple; summit dichotomous: leaves subulate, linear, remote, glabrous: rays somewhat 3-toothed: seeds naked. 2—3 f.

tinctoria, N. (W. y. & p.) radical leaves sub-bipinnate; leafets sub-oval, entire, glabrous; cauline ones sub-pinnate; leafets linear: rays 2-coloured: seeds naked. 1—4 f. Actinomeris.

5—2. Coriandrum. 45. 60.

Exotic.

sativum, S. (coriander. w. J. ☼.) fruit globose: calyx and style permanent. Aethusa.

1—2. Corispermum. 12. 29.

hyssopifolium, W. (O. Au. ♄.) spikes terminal: leaves linear, without nerves, unarmed. Var. *americanum*, N. spikes terminal and axillary: leaves nerved, subulate-mucronate. *S.* Ligustrum.

21—6. Cornicularia. 57. 2.

pubescens, (horned lichen.) frond decumbent, terete, rugose, a little scabrous, dark-coloured: branches interwoven, capillary, the extreme ones simple: receptacles of one colour, entire all around. On moist rocks, &c.

fibrillosa, frond obscurely soot-yellow, terete, smoothish, slender, entangled, ramose, somewhat rough-haired from the branchlets and fibres, which are flexuose, ramose, very thick, irregular, sub-clavate. On rocks. Variety of the pubescens. Usnea.

4—1. Cornus. 45. 58.

canadensis, L. (dogweed, low cornel. O. w. M. 2[.) herbaceous: leaves at the top, whorled, veiny: involucres ovate, acuminate: fruit globose. 4—8 i. *S.*

florida, L. (false box, dogwood tree. E. w-y. M. ♄.) leaves ovate, acuminate: involucres 4, very large, somewhat obcordate: fruit ovate. 15—30 f. *S.*

sericea, W. (1) (red osier. O. w. J. ♄.) branches spreading; branchlets woolly: leaves ovate, acuminate, rusty-pubescent beneath: cymes depressed, woolly. Berries bright blue. 8—12 f. *S.*

sanguinea, L. (W. w. J. ♄.) branches straight: leaves ovate, pubescent, both sides coloured alike: cymes spreading. Berries dark-brown: anthers yellow. 8—12 f. *S.*

circinata, Hr. (2) (O. w. J. ♄.) branches warty: leaves broad-oval, acuminate, white-downy beneath: cyme depressed. 6—8 f. *S.*

alba, W. (3) (white dogwood. O. J. ♄.) branches recurved; branchlets glabrous: leaves ovate, acute, pubescent, hoary beneath: cymes depressed. Berries bluish-white. 10 f. *S.*

paniculata, Hr. (4) (bush dogwood. O. w. J. ♄.) branches erect: leaves ovate, acuminate, glabrous, hoary beneath: flowers in a thyrsed cyme. Berries white, globular-flattened. 8—12 f. *S.*

stricta, H. (5) (O. w. Ju. ♄.) branches straight, fastigiate: leaves ovate; colour alike both sides: panicled cyme convex. 8—12 f. *S.*

alternifolia, (O. w. M. ♄.) branches warty: leaves alternate, ovate, acute, hoary beneath: cymes depressed, spreading. Berries purple. 18 f. *S.*

Exotic.

mascula, (cornelian cherry. M. ♄.) umbels equalling the involucre.

Southern.

asperifolia, Mx. (E. w. J. ♄.) branches erect, pubescent: leaves oval-lanceolate, acuminate, scabrous above, tomentose beneath. 4—10 f.

Ludwigia.

16—10. CORONILLA. 32. 93.

Exotic.

emerus, (coronilla. y. 2f.) stem angled, woody; peduncles about 3-flowered: claws of the petals about thrice as long as the calyx. Cicer.

14—1. CORONOPUS. 39. 63.

Southern.

ruellii, S. (E. w. Ju. ☼.) silicle entire; margin muricate: style prominent: corymb few-flowered.

didyma, S. (O. Ju. ☼.) silicles emarginate, in pairs, reticulate, rugose: style obsolete: corymb many-flowered. 1—2 f. Myagrum.

16—5. CORYDALIS. (6) 24. 62.

glauca, P. (7) (O. y-r-g. J. ♂.) corol 1-spurred: stem branching, erect: leaves glaucous; cauline ones biternate: raceme sub-corymbed; bracts minute: silique linear, thrice as long as the peduncle. 1—4 f. *S.*

aurea, W. (O. y. M. ☼.) stem branching, diffuse: leaves doubly-pinnate: leafets divided, lance-linear, acute at both ends: racemes one-way: bracts lanceolate: silique linear, thrice as long as the peduncle. 8—12 i. *S.*

cucullaria, W. (colic weed. O. y. & w. M. 2f.) corol 2-spurred: scape naked. raceme simple, 1-sided: nectaries divaricate, of the length of the corol: style enclosed. 8—12 i. *S.*

formosa, Ph. (A. r. M. 2f.) scape naked: raceme somewhat compound, nodding, many-flowered: nectaries very short, incurved: style extended. root tuberous. 6—10 i. *S.*

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(1) lanuginosa, Mx. alba, Wr. rubiginosa, Eh. (2) tomentulosa, Mx. rugosa, Lk. (3) stolonifera, Mx. (4) racemosa, Lk. (5) fatigiata, Mx. sanguinea, Wr. (6) Fumaria, L. (7) sempervirens, L.

fungosa, A. (1) (climbing colic-weed. O. r-w. J. ♂.) stem climbing: leaves cirrose: racemes axillary, corymbed, nodding: corol monopetalous, gibbous both sides of the base. *S.* Polygala.

19—12. CORYLUS. 50. 99.

americana, Wr. (hazel-nut. O. Ap. ♄.) leaves roundish, cordate, acuminate: calyx roundish-campanulate, larger than the sub-globose nut; border dilated, coarsely serrate. 3—5 f. *S.*

rostrata, W. (beaked hazel. O. Ap. ♄.) leaves oblong-ovate, acuminate: stipules lance-linear: calyx of the fruit bell-tubular, 2-parted; divisions gash-toothed, elongated beyond the nut into a beak. 2—3 f. *S.*

Exotic.

avellana, (filbert. Ap. ♄.) stipules oblong, obtuse: calyx of the fruit campanulate, spreading at the apex, torn-toothed: leaves round-cordate, acuminate. Var. *maxima*, has a gash-toothed calyx: nut depressed-ovate. Fagus.

13—1. CRANICHIS. 7. 21.

Southern.

multiflora, E. (E. O.) root fascicled, villous: leaves oval-lanceolate, sub-sessile: scape many-flowered, pubescent towards the summit: inner petals connivent; lip vaulted, acuminate. Pogonia.

Crantzia, HYDROCOTYLE.

11—5. CRATAEGUS. 36. 92.

coccinea, L. (thorn-bush. O. w. M. ♄.) thorny: leaves long-petioled, ovate, acutely-lobed, serrate, glabrous: petioles and pubescent calyx glandular: flowers pentagynous. Var. *viridis*, has lance-ovate leaves, sub-trilobate: stem unarmed. Var. *flexuosa?* Sz. having flexuous, spreading branches. A specimen from Rainy Lake was examined by Schweinitz, after it was past flowering.

pyrifolia, A. (pear-leaf thorn. O. w. J. ♄.) thorny or unarmed: leaves oval-ovate, gash-serrate, somewhat plated and rather rough-haired: calyx a little villose; leafets lance-linear, serrate: styles 3. *S.*

cordata, E. (2) (w. J. ♄.) thorny: leaves heart-ovate, pinnatifid-lobed, angled, glabrous: petioles and calyx without glands: stiles 5. *S.*

elliptica, W. (3) (M. ♄.) thorny: leaves oval, unequally serrate, glabrous: petioles and calyx glandular; divisions of the calyx obtuse: berry globose, 5-seeded. *S.*

glandulosa, W. (w. M. ♄.) thorny: leaves wedge-obovate, angled, glabrous, shining: petioles, stipules and calyx glandular: berries oval, 5-seeded. *S.*

parvifolia, W. (4) (low thorn. w. M. ♄.) thorny: leaves obovate, deeply serrate, entire at the base, tomentose: calyx gashed: flowers solitary: styles 5. 3—6 f. *S.*

punctata, W. (5) (common thorn tree. O. w. M. ♄.) thorny or unarmed: leaves wedge-obovate, sub-plicate, glabrous, serrate: calyx villose; divisions subulate, entire. Var. *rubra*, has red berries. Var. *aurea*, yellow berries, with dark specks. *S.*

crus-galli, W. (6) (thorn tree. O. w. M. ♄.) thorny: leaves wedge-obovate, sub-sessile, shining, leathery, serrate: corymbs compound; leafets of the calyx lanceolate, sub-serrate: styles 2. Var. *splendens*, leaves very shining. Var. *pyracanthifolia*, leaves lance-oblong, sub-cuneiform. Var. *salicifolia*, leaves lanceolate. Berries small, red. *S.*

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(1) recta, Mx. (2) populifolia, Ph. (3) prunifolia, Lk. (4) tomentosa, Mx. (5) crus-galli, Du Roi. (6) lucida, Wm. hyemalis, Wr.

flava, W. (yellow-berried thorn. M. ♄.) thorny: leaves wedge-obovate, angled, glabrous, shining: petioles, calyx and stipules glandular: flowers subsolitary: berries turbinate, 4-seeded. 8—10 f. *S.*

Exotic.

oxyacantha, (quickset. w. M. ♄.) leaves obtuse, somewhat 3-cleft, serrate, glabrous: peduncles and calyx somewhat glabrous: segments of the calyx lanceolate, acute: styles 2. Naturalized.

Southern.

lucida, E. (E. A. ♄.) thorny leaves wedge-obovate, crenate, coriaceous, lucid: corymbs simple, few-flowered: styles 5. 10—12 f.

turbinata, Ph. (E.) unarmed, glabrous: leaves wedge-obovate, notched, serrate: corymbs few-flowered: pedicels short: fruit turbinate.

arborescens, E. (E. w. March. ♄.) unarmed: leaves lanceolate, acute at each end, deeply serrate, glabrous above; nerves hairy beneath: corymbs many-flowered: calyx hairy; divisions subulate, entire: stiles 5. 20—30 f.

viridis, L.? (E. ♄.) thorny: leaves sub-sessile, spatulate-ovate, with round lobes, serrate, glabrous: calyx glabrous; divisions with glandular serratures.

spathulata, Mx. (E. w. Ap. ♄.) somewhat thorny: leaves clustered, (base long, tapering,) 3-cleft, lobed, crenate, glabrous: corymbs many-flowered: calyx glabrous: divisions ovate, entire. 12—15 f.

apiifolia, Mx. (1) (E. w. Ap. ♄.) thorny: leaves deltoid-ovate, notched and lobed, hairy: lobes deeply serrate: calyx hairy; divisions serrate: styles 2. 4—12 f.

populifolia, Wr. (E. w. Ap. ♄.) thorny: leaves ovate, sub-truncate at the base, acute-serrate, somewhat lobed: petioles sparingly glandular: styles 5.

caroliniana, E. (E. ♄.) leaves cordate, cuneate, entire, (dentate?) 3-5-lobed peduncles bracted: calyx somewhat leafy. Sorbus.

6—1. CRINUM. 9. 17.

Southern.

americanum, A. (W.) leaves oblong-lanceolate, very glabrous at the margin, apex compressed-unguiculate: flowers pedicelled: tube shorter than the limb. Conostylis.

Cristaria, MALVA.

Critonia, KUHNIA.

3—1. CROCUS. 6. 18.

Exotic.

officinalis, (saffron. y. 2f.) leaves linear, with revolute margins: stigma exsert, with long-linear segments. Var. *sativus*, having violet corols. Phyllactis.

16—10. CROTALARIA. 32. 93.

sagittalis, Mx. (rattle-box. E. y. Ju. ☼.) hirsute, erect, branching: leaves simple, lance-oblong: stipules lanceolate, acuminate, decurrent: racemes opposite to the leaves, about 3-flowered: corol less than the calyx. *S.*

parviflora, W. (2) (E. y. J. ☼.) hirsute, erect, branching: leaves simple, lance-linear: stipules above decurrent, with two short teeth: racemes opposite to the leaves: corol smaller than the calyx. *S.*

Southern.

ovalis, Ph. (E. y. Ju. ☼.) hirsute, diffuse, branching: leaves simple, oval, pe-

(1) oxycantha, Wr. (2) A variety of sagittalis, Mx.

tioled: upper stipules scarcely decurrent, short: racemes opposite to the leaves, long: corol as long as the calyx. 12 i.

laevigata, Ph. (E. Ju. ☼.) glabrous, erect, simple: leaves lance-oblong: stipules lanceolate, acuminate, decurrent: racemes opposite to the leaves, 3-flowered. Genista.

Crotalaria, BAPTISIA.

19—5. CROTON. 38. 96.

Southern.

maritimum, Wr. (1) (O. Ju. ♄. 2[.) leaves oval or ovate, sub-cordate, obtuse, pale above, hoary beneath: branches tomentose: pistillate spikes few-flowered. Var. *monanthogynum*, spikes dichotomous: pistillate flowers solitary, pedicelled. 2—3 f.

argyranthemum, Mx. (E. Ju. 2[. & ♄.) leaves entire, obtuse, obovate: racemes terminal, short, many-flowered: calyx pedicelled, silvery.

glandulosum, L. (O. Ju. ☼.) leaves oblong, serrate, hairy beneath; base nearly entire, bearing two glands: stem trichotomous: spikes in the division of the stem.

ellipticum, N. (W. ☼.) stellate-pubescent: leaves elliptic-ovate, (older ones obtuse) smooth and green above: flowers conglomerated: styles 3, bifid.

capitatum, Mx. (W. ☼.) woolly-tomentose: leaves oval-oblong, obtuse, entire and rounded at the base; both sides tomentose: fertile flowers at the base of the spikelets; staminate ones capitate, crowded. Pinus.

19—5. CROTONOPSIS. 38. 98.

linearis, Mx. (2) (J. 2[.) stem erect, dichotomous-branching: leaves stellate-pubescent above, covered with silvery scales beneath. 12—18 i. *S.* Amaranthus.

21—2. CRYPHÆA. 56. 4.

heteromalla, stem branching, diffuse: leaves lance-ovate, acute, 1-nerved: capsules lateral, sub-sessile. On trunks. Pilotrichum.

3—2. CRYPSIS. Lk. 4. 10.

virginica, W. (3) (S. 2[.) spikes oblong, thick-lobed: stem procumbent, geniculate: joints numerous, approximate: leaves involute, rigid, pungent. *S.*

Southern.

squarrosa, N. (W. ☼.) stem decumbent, branching: capituli squarrose, few-flowered: leaves short, rigid, pungent. Alopecurus.

2—2. CRYPTA. 13. 86.

minima, (4) (mud purslane. w-g. S.) stem dichotomous, decumbent, striate: leaves wedge-oval or obovate, opposite, sessile, entire, papillose above, with very minute stipules: flowers axillary, sessile, solitary Erianthus.

10—3. CUCUBALUS. 22. 82.

behen, L. (bladder campion. E. w. Ju. 2[.) glabrous, glaucous, decumbent: leaves oblong-oval, acute, nerveless: calyx inflated-membranaceous, veiny.

nivens, M. (5) (E. w.) stem divaricate-dichotomous above: leaves oblong-lanceolate, minutely, pulverulent, pubescent; upper ones ovate: calyx obtuse, bell-form, inflated, sub-pilose.

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(1) disjunctiflorum, Mx. (2) argentea, Ph. (3) Agrostis virginica, W. (4) Peplis americana, Ph. (5) Silene, M.

scillatus, L. (O. w. Ju. 2f.) pubescent, erect: leaves whorled, in fours, lance-oval, very long-acuminate. 2—3 f. *S.* Silene.

19—16. Cucumis. 34. 97.

Exotic.

colocynthis, (bitter apple. ☼.) leaves many-cleft: pomaceous berry globose, glabrous. Fruit very bitter.

anguria, W. (prickly cucumber.) leaves palmate-sinuate: fruit globose, echinate.

anguinis, (snake cucumber. ☼.) leaves lobed: pomaceous berry cylindric, very long, smooth, contorted, plaited.

melo, W. (muskmelon. y. Ju. ☼.) angles of the leaves rounded: pome oblong, torulose. Sweet-scented.

sativus, W. (cucumber. y. Ju. ☼.) angles of the leaves straight: pomaceous berry oblong, scabrous. Brought from Asia. Cucurbita.

19—16. Cucurbita. 34. 97.

Exotic.

ovifera, W. (egg-squash. ☼.) leaves cordate, angled-5-lobed, denticulate, pubescent: pomaceous berry with fillet-like stripes lengthwise.

verrucosa, W. (club-squash. y. J. ☼.) leaves cordate, deeply 5-lobed; middle lobe narrowed at the base, denticulate: pomaceous berry clavate, a little warty.

melopepo, W. (flat squash. y. J. ☼.) leaves cordate, obtuse, sub-5-lobed, denticulate: pomaceous berry depress-based, swelled at the margin.

pepo, W. (pumpkin. y. Ju. ☼.) leaves cordate, obtuse, sub-5-lobed, denticulate: pomaceous berry roundish or oblong, smooth. Var. *petiro*, has the fruit more or less flattened. From Asia.

citrullus, W. (watermelon. y. Au. ☼.) leaves 5-lobed: the lobes sinuate-pinnatifid, obtuse: pomaceous berry oval, smooth. Fruit watery, often striped. From Africa and the south of Asia.

lagenaria, W. (gourd, calabash. w. Au. ☼.) leaves cordate, round-obtuse, pubescent, denticulate, with 2 glands at the base on the under side: pomaceous berry clavate, somewhat woody.

Southern?

foetidissima, Kunth? (1) (W. Ju. 2f.) stems procumbent, sulcate: leaves alternate, long-petioled, somewhat erect, triangular-cordate, scabrous, glaucous, thick; margin sinuate, undulate: fruit globose, smooth, sub-sessile: tendrils trichotomous. Ricinus.

13—I. Cunila. 42. 39.

mariana, L. (dittany. E. Highlands. r-b. J. 2f.) leaves ovate, serrate, sessile: corymbs axillary and terminal, dichotomous. Diaphoretic, B. *S.* Hyssopus.

Cunila, Hedeoma.

11—1. Cuphea. 54. 91.

viscosissima, (wax-bush. E. p. J. ♄.) viscous: leaves opposite, petioled, ovate-oblong: flowers with 12 stamens, lateral, solitary: peduncles very short. *S.* Washington co. Stevenson. Myrtus.

19—15. Cupressus. 51. 100.

thyoides, W. (white cedar. O. M. ♄.) branchlets compressed: leaves imbricate four ways, ovate, tubercled at the base: strobile globular. *S.*

(1) Cucumis? perennis, James.

disticha, W. (E. Feb.) leaves distichous, flat, deciduous: sterile florets paniculate, leafless: strobile spherical. *S.* Vallisneria.

5—2. Cuscuta. 29. 43.

americana. W. (dodder. O. w. Au. ☼) flowers peduncled, umbelled, 5-cleft: stigma capitate. A bright yellow leafless vine, twining around other weeds in damp places.

europea, (E. w. Au. ☼.) flowers sub-sessile: stigma acute: stamens 4 or 5. Gelseminum.

Cyamus, Nelumbium.

21—6. Cyathus. 58. 1.

striatus, (tunnel fungus.) dark-brown, villous, striate within, chesnut-brown. On the earth and fallen branches in woods, late in autumn.

olla, cinereous outside, or becoming sooty-yellow, sub-tomentose; lead livid within.

nitidus, (bird-nest fungus.) campanulate, grey, tomentose; margin at length revolute; shining lead-colour within, striate with concentric zones. In sand and on wood, in summer and autumn.

crucibulum, sub-cylindric, indurated, sub-tomentose, ochre-yellow. In pine woods, rarely in gardens, on branches, chips, &c. Phallus.

18—1. Cymbidium. 7. 21.

pulchellum, Sw. (1) (grass pink. O. r. Ju. 2ℓ.) radical leaves ensiform, nerved: scape few-flowered: lip erect, slender at the base: lamina spread; disk concave, bearded. Var. *graminifolia*, leaves 1—2 lines broad; bracted ones acuminate. 12—18 i. *S.* Arethusa.

18—5. Cynanchum. 30. 47.

Southern.

angustifolium, M. (2) (L. y-g. Ju. 2ℓ.) twining: leaves linear, entire: flowers umbelled; peduncles the length of the leaves: divisions of the calyx linear.

laeve, Mx. (3) (W. p. J. 2ℓ.) shoots somewhat glabrous: leaves sub-conoid-cordate, gradually acute, nerved, pubescent beneath: flowers glabrous; divisions of the corol oval-oblong, obtusish: follicles smooth. Echites.

17—1. Cynara. 49. 54.

Exotic.

cardunculus, (cardoon. 2ℓ.) leaves spinose, all pinnatifid: scales of the calyx ovate.

scolymus, (garden artichoke. 2ℓ.) leaves sub-spinose, pinnate: scales of the calyx ovate. Naturalized. Stokesia.

3—2. Cynodon. 4. 10.

dactylon P. (4) (E. Au. 2ℓ.) creeping: spikes digitate, (4—5) spreading: keel of the calyx scabrous: leaves hairy on the margin and base: sheaths hairy. 1 f. *S.* Gymnopogon.

5—1. Cynoglossum. 41. 42.

officinale, (hound-tongue. O. p. Ju. ♂.) very soft-pubescent: leaves broad-lanceolate, sessile: panicled racemes.

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(1) Limodorum tuberosum, L. Calopogon pulchellum, Br. (2) Ceropegia palustris, Ph. (3) Gonolobus, Mx. (4) Digitaria, E. Panicum, L.

amplexicaule, Mx. (1) (O. w. & b. J. 2f.) very hirsute: leaves oval-oblong; upper ones clasping: corymbs terminal, leafless, long-peduncled. *S.*

Southern.

sylvaticum, S. (E. b. Ju. ♂.) nakedish: leaves spatulate-lanceolate, shining, scabrous beneath: racemes scattered.

pilosum? (W. w. M.) hairy: radical leaves spatulate-oblong; cauline ones lance-oblong, obtuse: flowers axillary, sub-spiked, secund.

Rochellia.

Cynosurus, ELEUSINE and CHLORIS.

3—1. CYPERUS. 3. 9.

inflexus, M. (2) (E. Au. ♂?) umbel 2—3-rayed, or conglomerated and simple: involucre 3-leaved, very long: spikelets collected into ovate heads, oblong, 8-flowered: glumes squarrose at the tip. 2—3 i. *S.*

flavescens, L. (O. Au. 2f.) spikelets linear-lanceolate, in fascicles of 3—4: glumes obtuse: style 2-cleft: seed lenticular: involucre 3-leaved, longer than the spikes. 6—8 i. *S.*

nuttallii, T. (L. Au. 2f.) culm acute-triangular: umbel radiated, or sub-sessile, loose: rays short: involucre 4-leaved; two leaves longer: spikelets linear-lanceolate, compressed, acute: stamens 2: style 2-cleft: seed oblong, obtuse, compressed. 5—12 i.

diandrus, T. (E. S. 2f.) culm slender, obtuse-triangular: umbel sessile or 1—2-rayed: involucre 3-leaved; two of the leaves longer than the umbel: spikelets lanceolate-oblong, much compressed, many-flowered: (14—16) glumes margined, acutish, keeled: stamens 2: style 2-cleft: seed oval, compressed. 8—12 i.

dentatus, T. (3) (E. S.) umbel compound, (6—10-rayed:) involucre 3-leaved, longer than the umbel: spikelets 3 on each ray, alternate-ovate, compressed, 8-flowered: glumes acute, nerved, spreading at the points: seed triquetrous. 1 f.

erithrorhizos, M. (E. Au.) umbel decompound: involucre 3—6-leaved, long: spikes alternate, linear, horizontal; about 12-flowered, nearly terete: style 3-cleft: seed triquetrous. 1 f.

strigosus, L. (Au.) spikelets linear, compressed, acute, alternate: glumes lanceolate, nerved: umbel simple or compound: involucre about 6-leaved; margin pubescent: root globose. 1—2 f. *S.*

tenuis, Sw. (2f.) spikes lanceolate, acute, 10—17-flowered: umbel simple: involucre 3—4-leaved, longer than the rays: root tuberous. 8 i.

phymatodes, M. (Au.) umbel simple or decompound: involucre 3—9-leaved; three of the leaves very long: peduncles compressed: spikelets distichous, linear; lower ones branched, about 15-flowered; sides rather convex: glumes oblong, obtuse: radicles tuberous at the extremities. 1 f.

compressus, L. spikes digitate, somewhat in fours, lanceolate: glumes mucronate, broad, membranaceous. 3—8 i. *S.*

virens, Mx. culm acute-triangular: umbels decompound: spikelets ovate-lanceolate, capitate: involucre very long. 1—2 f. *S.*

mariscoides, E. (E. Au.) umbel simple or 1—2-rayed: spikelets capitate, linear, 7—8-flowered: glumes loose, obtuse. 8—12 i. *S.*

odoratus, L. (Au.) spikelets corymbed, subulate, remote, distichous: glumes somewhat distant: smaller umbels very spreading, about the length of their involucres. *S.*

flavicomis, Mx. (E.) culm triquetrous: umbel compound: spikes linear-lanceolate, 7-flowered, (10—12-flowered, E:) glumes obtuse: involucre long, reflexed. *S.*

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(1) virginicum, L. (2) uncinatus, Ph. (3) parviflorus, M.

articulatus, Vahl. (E. Ju. 2f.) stem columnar, naked, jointed, erect. 3—6 f. *N.*
kyllingaeoides, Vahl. (E. J.) head globose: spikes oblong, convex, about 8-flowered: involucres 4-leaved, and with the keeled leaves loose. *S.*
strigosus, E. (E. S.) spikes oblong, loose; spikelets subulate, expanding, a little remote: small involucres generally wanting: partial umbels with alternate rays. 2—3 f. *S.*
alterniflorus, Sz. (W. 2f.) spike corymb-umbelled, compressed, central, subsessile: spikelets distichous: florets alternately distant: glume broad-ovate, keel mucronate. 1 f.
minimus, W. (E?) culm capillary, terete: spikes solitary or in pairs: involucre 1-leaved.

Southern.

fasciculatus, E. (E.) spikelets ovate-oblong, many-flowered, in terminal fascicles: involucre 2-leaved, and with the leaves linear, very narrow. 6 i.
poaeformis, Ph. (E. Ju.) spikes oblong, flattened, corymb-fascicled; fascicles sessile and peduncled: involucre 3-leaved, very long. 8 i.
autumnalis. Vahl. (E. Ju.) spikes linear, terminal, digitate, somewhat in threes: umbel as long as the 2-leaved involucre.
vegetus, Vahl. (E. Ju.) stem slender, obtusely 3-angled: umbels decompound: spikelets oval, in compact globose heads: involucre very long. 2—3 f.
formosus. Vahl. (W. 2f.) spikelets ovate-lanceolate, capitate: involucre about 6-leaved, very long, scabrous at the margin.
filiculmis, Vahl. (E.) spikelets linear, in globose heads, expanding: umbel about 1-rayed: involucre 2-leaved, with the stem setaceous.
filicinus, Vahl. (Ju. 2f.) spikelets linear-lanceolate, somewhat remote, loose-imbricate: involucre 3-leaved, longer than the umbel, with the leaves loose.
gracilis, M. (E. S. ☼.) stem slender, acutely 3-angled: leaves 3-angled: umbels compound: spikelets linear-lanceolate. 12 i.
tenuiflorus, Vahl. (E. S.) spikes corymbed: spikelets linear, somewhat convex: involucre longer than the umbel: stem leafy. 2—3 f.
tetragonus, E. (E.) spikes oblong, cylindric: spikelets somewhat 4-angled, few-flowered: small involucre wanting. 2—3 f.
distans, Vahl. (E.) spikes distichous: spikelets filiform, expanding: florets distant: umbel straight.
speciosus, Vahl. (E. S.) spikes corymbed: spikelets subulate, distichous: partial umbels shorter than the small involucres: ochreas 2-awned: stem acutely angled. 2—4 f.
enslenii, Ph. (E. Au.) spikes corymbose, oblong, branching at the base, naked: spikelets numerous, divaricate, crowded, linear, about 6-flowered: valves oblong, striate: involucre 8-leaved, as long as the umbel.

Eriophorum.

18—2. CYPRIPEDIUM. 7. 21.

candidum, M. (white ladies' slipper. w. M. ♄.) stem leafy: leaves lance-oblong: lobe of the style lanceolate, obtusish: lip compressed, shorter than the lanceolate petals.
parviflorum, Sy. (1) (E. y-g. M. 2f.) stem leafy: lobe of the style triangular, acute; outer petals oblong-ovate, acuminate; inner ones linear, contorted: lip shorter than the petals, compressed. *S.*
pubescens, W. (2) (yellow ladies' slipper. y. M. 2f.) stem leafy: lobe of the style triangular-oblong, obtuse: outer petals oblong-ovate, acuminate; inner ones very long, linear, contorted: lip compressed, shorter than the petals. *S.*
spectabile, W. (3) (gay ladies' slipper. O. w. & p. J. 2f.) stem leafy: lobe of

(1) calceolus, Mx. (2) flavescens, Redoute. calceolus, Wr. (3) canadense, Mx. album, A. reginae, Wr.

the style oval-cordate, obtuse: outer petals broad-oval, obtuse: lip longer than the petals, split before. *S.*

acaule, A. (1) (low ladies' slipper. O. w. & p. M. 2f.) scape leafless, 1-flowered: leaves radical, in pairs, oblong, obtuse: lobe of the style round-rhomboid, acuminate, deflexed: lip longer than the lanceolate petals, split before. *S.*

arietinum, A. (E. w. r. g. M. ♄.) stem leafy: lobe of the style orbicular, obtusish: petals 5; the two lower ones lance-linear, deflexed; the two lateral linear spreading; upper one ovate-oblong, acute: lip of the length of the petals, ob-conic before, saccate. Asclepias.

5—1. CYRILLA. 40. 41.

Southern.

racemiflora, L. (E. J. ♄.) leaves lanceolate, cuneate at the base, coriaceous, very smooth: petals thrice as long as the calyx. 15 f. Galax.

CYTISSUS, see GENISTA.

D.

3—2. DACTYLIS. 4. 10.

glomerata, L. (E. J. 2f.) panicle secund, glomerate: leaves carinate. 2—3 f. *S.* Danthonia.

16—10. DALEA. 32. 93.

Southern.

aurea, N. (W. y. 2f.) erect: spikes dense, cylindric: bracts rhomboid-ovate, as long as the calyx: calyx woolly-villose: leafets (about 9) obovate, pilose beneath.

laxiflora, Ph. (W. w. 2f.) somewhat glabrous: stem very branching above: branches lax, elongated: spikes panicled, elongated, with remotish enneandrous flowers: bracts roundish, mucronate, keeled: calyx silky-villose: leaves about 4 pairs, linear.

alopecuroides, W. (2) (W. b. Ju. ☼.) spikes cylindric, peduncled, terminal, silky, crowded: bracts about as long as the calyx: leaves 6—12 pairs, oval, (toothed near the summit?) retuse, mucronate.

pedunculata, Ph. (W. w-r. Ju. ☼.) a little glabrous: spikes oblong, axillary, somewhat crowded, short: peduncles thrice as long as the leaves: bracts minute, as long as the pedicels: teeth of the calyx subulate: leaves about in 6 pairs, linear, acute, mucronate. Is this a variety of the last?

formosa, T. & J. (W. p. ♄.) suffruticose, very branching, glabrous: leafets somewhat in 5-pairs, wedge-oblong, retuse, black-punctate beneath: spikes lax, few-flowered, short-peduncled: bracts ovate, shorter than the calyx; calyx plumose-villous. Psoralea.

Dalea, ASTRAGALUS.

11—13. DALIBARDA. 35. 92.

repens, Lk. (3) (O. w. J. 2f.) villose: having creeping shoots: leaves simple, cordate, crenate: peduncles 1-flowered.

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(1) humile, W. (2) cliffortiana, Ph. Petalostemon, do. Dalea linnaei, Mx. (3) violacoides, Mx. Rubus dalibarda, W.

fragaroides, Mx. (1) (dry strawberry. E. y. M. 2f.) leaves ternate: leafets wedge-form, gash-serrate, ciliate: peduncles many-flowered: tube of the calyx obconic. 5—8 i.

Southern.

lobata, Bald. (E. y. M. 2f.) hairy: leaves nearly round, cordate, lobed, crenate, ciliate: stem somewhat naked: peduncles many-flowered. 5 i. Dryas.

3—2. DANTHONIA. 4. 10.

spicata, W. (2) (E. Ju. 2f.) panicle simple, appressed: spikelets 7—9, about 7-flowered: inferior valve of the corol hairy: leaves subulate: lower sheaths hairy at the throat. 18—24 i.

glumosa, Mx. (3) (E. Ju.) culm erect: raceme compound: branches 2 and 3-flowered: spikelets 9 to 13, 8 and 9-flowered, somewhat shorter than the calyx: valves of the corol very unequal, outer lanceolate, densely villose on the margin, bristly, 2-cleft at the apex, with a central twisted awn: inner valve ciliate, much shorter. *S.* Trisetum.

8—1. DAPHNE. 31. 25.

Exotic.

mezereum, (mezereon. M. ♄.) flowers sessile, cauline, in threes: leaves lanceolate.

odora, (sweet mezereon. w. Ap. ♄.) having many flowers in little terminal heads: leaves scattered, lance-oblong, glabrous. Tropaeolum.

15—10. DARLINGTONIA. 33. 93.

[Generic description by De Candolle.]

Petals 5, distinct: stamens 5: legume bivalved continuous, dry, 1-seeded, lanceolate.

Southern.

brachyloba, Dc. (W. 2f.) unarmed, herbaceous, glabrous: leaves 6 to 8 pairs; leafets 16 to 24 pairs, linear, with glands between the lower leaves: little heads solitary, axillary, peduncled: legumes shortish, lanceolate.—Kentucky, &c.

glandulosa, Dc. (W. 2f.) unarmed, herbaceous, glabrous: leaves 12 to 14 pairs; leafets 20 to 30 pairs, linear, with glands between all the leaves: little heads solitary, peduncled, axillary: legumes falcate. Tennessee.

intermedia, T. & J. (W. 2f.) unarmed, herbaceous, glabrous: leaves 8 or 9 pairs; leafets 20 to 24 pairs, oblong-linear, with glands between the lower leaves: little heads solitary, axillary, peduncled: legumes falcate. Schrankia.

20—12. DATISCA. 54. 98.

hirta, W. (false hemp. y. 2f.) stem hirsute: leaves pinnate: leafets running together at the base. Flowers small, panicled. Zamia.

5—1. DATURA. 28. 41.

stramonium, L. (thorn apple. O. w-b. Au. ☼.) pericarps spinose, erect, ovate: leaves ovate, glabrous, angular-dentate. *S.*

tatula, L. (O. b. Ju. ☼.) pericarps spinose, erect, ovate: leaves cordate, glabrous, toothed. This species is considered only a variety of the first by some botanists. Stem reddish. *S.* Azalea.

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(1) Dryas trifoliata, Pallas. (2) Avena, L. (3) sericea, N. Avena, gl. Mx.

5—2. Daucus. 45. 60.

carota, W. (carrot. w. J. ♂.) seeds hispid: petioles nerved underside: divisions of the leafets narrow-linear, acute. 2—3 f.

Southern.

pusillus, Mx. (E.) retrorsely hispid: leafets with the segments very small, linear-lanceolate: umbels small: seeds muricate, with 8-crested ribs. 16—18 i. Uraspermum.

Decodon, Lythrum.

11—1. Decumaria. 19. 39.

Southern.

barbara, W. (E. w. Ju.) leaves ovate-oblong, acute at each end, slightly serrate.

sarmentosa, W. (E. J.) leaves ovate, acute, rounded at the base, serrate at the top. Philadelphus.

21—6. Dedalea. 58. 1.

quercina, coriaceous, pale-woody: pileus regular, glabrous; laminae branch-sinuate, with the hollows large. On trunks of oaks, &c. Boletus.

21—4. Delesseria. 57. 2.

alata, stem compressed: leaves pinnate, confluent, ribbed, linear, entire. In the sea. Sphaerococcus.

12—2. Delphinium. 26. 61.

exaltatum, W. (1) (A. b. Ju. 2f.) petioles not dilated at the base: leaves flat, 3-cleft below the middle; lobes wedge-form, 3-cleft at the apex, acuminate; lateral ones often 2-lobed: raceme straight: spur longer than the calyx. 2—4 f. *S.*

azureum, Mx. (2) (b. M. 2f.) petioles slightly dilated at the base: leaves 3—5-parted, many-cleft; divisions linear: racemes straight: petals densely bearded: flowers short-pedicelled. 2 f. *S.*

virescens, N. (W. g-w. 2f.) pubescent: nectary 4-leaved, shorter than the 5 calycine petals, inner laminae densely bearded: leaves 3-parted; divisions linear, sub-trifid, lower ones divaricate. 8—12 i. *S.*

Exotic.

consolidum, (larkspur. b. Ju. ☼.) nectaries 1-leaved: stem sub-divided. Naturalized.

staphisagria, (b. ♂.) nectary 4-leaved, shorter than the petals: leaves palmate, with obtuse lobes.

ajacis, (rocket larkspur. b. Au. ☼.) nectary 1-leaved: stem simple.

Southern.

tricorne, Mx. (O. b. M. 2f.) petiole scarcely dilated at the base, glabrous: leaves 5-parted; divisions 3—5-cleft, segments linear: nectary shorter than the corol: capsules arched, expanding from the base. 8—12 i. Aconitum.

14—2. Dentaria. 39. 63.

diphylla, Mx. (tooth-root, trickle, pepper-root. O. y. & r. M. 2f.) stem 2-leaved: leaves ternate, ovate-oblong, unequally gash-toothed: root toothed. 6—8 i. *S.*

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(1) trydactylum, Mx. urceolatum, Ju. (2) carolinianum, Wr.

laciniata, W. (1) (p. M. 2f.) leaves in threes, ternate; leafets 3-parted; segments oblong, gash-toothed: root tuberous, moniliform. 8 i. *S.*

heterophylla, N. (W. p. w. J.) stem 2-leaved; leaves ternate, petioled; leafets linear, sub-lanceolate, acute, entire; margin rough, ciliate: radical leafets ovate-oblong, coarsely gash-toothed. Very small. Always one radical leaf with a long petiole.

maxima, N. (W. p. 2f.) leaves numerous, alternate, petioled; leafets ternate, sub-oval, gash-toothed; lateral ones lobed: axils without glands: racemes lateral and terminal. 12—18 i.

Southern.

multifida, M. (E. p.) stem 2-leaved: leafets many-parted, segments linear, somewhat acute. 10 i.

tenella, Ph. (W. p. Ap. 2f.) stem 2-leaved: leaves distant, sessile, ternate; leafets linear-oval, entire: petals wedge-form.

dissecta, (2) (E. p. Mar.) glabrous, erect: stem 2-leaved: leaves many-cleft; divisions linear: flowers racemed. 4—5 i. Cardamine.

Diamorpha, SEDUM.

10—2. DIANTHUS. 22. 82.

armeria, L. (pink. E? r. Ju. ☼.) flowers aggregate, fascicled: scales of the calyx lanceolate, villose, equalling the tube. 1 f.

Exotic.

barbatus, (sweet william. r. & w. Ju. 2f.) flowers fascicled: scales of the calyx ovate-subulate, equalling the tube: leaves lanceolate.

caryophyllus, (carnation. r. & w. 2f.) flowers solitary: scales of the calyx sub-rhomboid, very short: petals crenate, beardless: leaves linear-subulate, channelled. By rich culture, the stamens mostly change to petals.

chinensis, (china pink. Ju. ☼.) flowers solitary: scales of the calyx subulate, spreading, leafy, equalling the tube: petals crenate: leaves lanceolate.

plumarius, (single pink. r. & w. 2f.) flowers solitary: scales of the calyx sub-ovate, very short and obtuse, awnless: corol many-cleft, with the throat hairy.

Southern.

carolinianus, Wr. (E.) flowers aggregate: peduncles long: scales smaller than the halved tube. Scleranthus.

5—1. DIAPENSIA. 21. 43.

lapponica, W. (3) (A. w. Ju. 2f.) cespitose: leaves spatulate, glabrous: flowers pedunculate: anthers oblique, awnless.

cuneifolia, Sy. (4) (A. w. J. ♄.) creeping: leaves lance wedge-form, pubescent below: flowers sessile: anthers horizontal, beaked at the base. *S.* Datura.

3—2. DIARRHENA. 4. 10.

americana, Pb. (W? Ju. 2f.) culm erect, almost naked, slender, slightly compressed, scabrous above: sheaths sub-pubescent: panicle racemed: branches few-flowered, appressed: spikelets about 2-flowered: florets diverging. Dactylis.

5—2. DICHONDRA. 29. 43.

Southern.

caroliniensis, Mx. (E. p. J. 2f.) pubescent: leaves reniform-emarginate, one-coloured: calyx villose ciliate. Creeping. Evolvulus.

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(1) concatenata, Mx. (2) M. C. Leavenworth. (3) obtusifolia, Sy. (4) Pyxidanthera barbulata, Mx.

DICHROMA.* DICHROMENA.

3—2. DICHROMENA. 4. 9.

Southern.

leucocephala, Mx. (E. Au. 2f.) involucre somewhat 3-leaved, white at the base: head white. 1 f.

ciliata, Ph. (E. Ju.) involucre and leaves ciliate at the base: spikelets oblong, tapering.

latifolia, Bald. (E. J. 2f.) involucre many-leaved, large, with the leaves white: heads compressed: leaves very long, loosely sheathing the stem. 9—18 i. Leersia.

21—1. DICKSONIA. 55. 5.

pilosiuscula, W. (1) (fine haired fern. O.) Described under Aspidium punctilobium. Cheilanthes.

Diclytra, CORYDALIS.

21—2. DICRANUM. 56. 4.

1. *Capsule with apophyses.*

cerviculatum, monoecious: stem simple: leaves capillary, without nerves, spreading, lax: capsule ventricose, erectish; apophysis gibbose.

virens, stems divided; branchlets erect, sub-divided: leaves clasping at the base, linear, flat, spreading, coiled: capsules nodding, at length curved; apophysis wen-like.

fragile, stem erect, ramose, very fragile: leaves erect, densely crowded together, somewhat whorled, lance-ovate, acuminate, sub-entire, with the margin undulated: capsule nodding, elongated; apophysis wen-like, at length striate.

2. *Capsules without apophysis, or truncated processes on the foreside of the base.*

(Leaves turned to one side.)

scoparium, stem ramose: leaves lance-ovate, acuminate, keeled, falcate: pedicels sheathed, solitary: lid long-beaked.

condensatum, stem short, simple: leaves lance-oblong, mucronate, with extended fascicular points: capsules nodding; lids subulate. On the earth.

heteromallum, stem sub-simple: leaves capillary, one-nerved, dilated at the base: capsule ovate; lid long-beaked.

orthocarpon, small; stem short, simple: leaves setaceous, dilated at the base: peduncles lateral, longish: capsule sub-erect, oblong-ovate; lid beaked.

varium, stem sub-simple: leaves somewhat one-sided; lower ones lanceolate, upper ones subulate: capsules urceolate, somewhat nodding; lid conic.

(Leaves not one-sided.)

xanthodon, minute: leaves lanceolate, long-acuminate: capsules ovate: teeth of the peristome yellow.

polycarpon, stem ramose: leaves linear-subulate, twisted when dry, investing the stem on all sides: capsule obovate, erectish, furrowed. On rocks in mountains.

glaucum, small: stem ramose, thick, with a dense foliation: leaves glaucous, convex-channelled: capsule sub-inclined, oblong-ovate; lid slenderly subulate, sub-inflexed.

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* Strike out this Genus at page 17.

(1) pubescens, Sh. Aspidium punctilobum.

3. *Capsules with truncated prominences on the foreside of the base.*

purpureum, stem dichotomous: leaves lanceolate, twisted when dry, furnished with a purple nerve: capsule oval; lid conic. Campylopus.

21—2. DIDYMODON. 56. 4.

rigidulum, leaves lanceolate, cuspidate from the middle nerve, somewhat rigid: lid subulate, a little curved. Splachnum.

5—1. DIERVILLA. 48. 58.

canadensis, M. (1) (bush honeysuckle. O. y. Ju. ♄.) peduncles axillary and terminal, dichotomous, 3-flowered: leaves ovate, serrate, acuminate. 2—3 f. *S.* Pinckneya.

13—2. DIGITALIS. 40. 40.

Exotic.

purpurea, (foxglove. p. Ju. ♂.) leafets of the calyx ovate, acute: corol obtuse; upper lip entire: leaves lance-ovate, rugose.

intermedia, (p. Ju.) leafets of the calyx lanceolate, equal: corol slightly pubescent; upper lip emarginate, 2-cleft: leaves pubescent at the margins and base. Capraria.

3—2. DIGITARIA. 4. 10.

sanguinalis, Scop. (E. S. ☼.) spikes numerous, fascicled, a little spreading: leaves and sheaths somewhat hairy: spikelets oblong: florets pubescent on the margin. 1—2 f. *S.*

glabra, R. & S. (E. Au. ☼.) spikes digitate, sub-alternate (3—4,) spreading: leaves and sheaths smooth: spikelets ovate, crowded: calyx equal to the abortive floret, both hairy. 1 f.

serotina, Mx. (E. 2ſ.) decumbent: leaves and sheaths very pubescent: spikes numerous, setaceous; spikelets all pedicellate: inferior glume very minute. 12—18 i. S.

filiformis, E. (E. Au. ☼) culm erect, filiform: leaves somewhat glabrous: spikes 2—4, filiform, erect: spikelets in threes, all pedicellate: calyx 1-valved, as long as the abortive floret, pubescent. 12—18 i. *S.*

paspaloides, Mx. (E. Au. ☼.) spikes in pairs, sub-villose at the base: rachis broadish, glabrous: flowers solitary, imbricate two ways, glabrous: leaves spreading; sheaths glabrous, villose at the neck: culm creeping. *S.* Andropogon.

3—1. DILATRIS. 6. 18.

tinctoria, Ph. (2) (red-root. E. y. Ju. 2ſ.) petals lanceolate, downy outside: panicle corymbed, downy: leaves long, naked, linear. 2 f. *S.* Valeriana.

4—1. DIODIA. 47. 57.

virginica, W. (w. Au. 2ſ.) glabrous: stem procumbent, nearly terete: leaves lanceolate: corol glabrous within: fruit oblong, glabrous. *S.*

Southern.

tetragona, Wr. (E. w. M.—O. 2ſ.) stem procumbent, somewhat angled, nearly glabrous: leaves cordate-ovate: stipules subulate.

hirsuta, Ph. (E. w. S. 2ſ. hirsute: stem procumbent: leaves lanceolate: stipules nearly setaceous. Perhaps a variety of the last. E. Hedyotis.

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(1) lutea, Ph. humilis, P. tournefortii, Mx. Lonicera diervilla, L. (2) heritiera, P. Lachnanthes, E.

10—1. Dionæa. 20. 68.

Southern.

muscipula, W. (Venus' fly-trap. E. w. Ju. 2f.) radical leaves, with terminal ciliate appendages, somewhat resembling a rat-trap; this is suddenly closed on being irritated. Jussiena.

20—6. Dioscorea. 11. 12.

villosa, L. (1) (yam root. O. J. 2f.) leaves alternate, opposite and whorled, cordate, acuminate, pubescent beneath, 9-nerved; lateral nerves simple. Stem climbing. *S.*

quaternata, Wr. (2) (J. 2f.) leaves verticillate by fours, and alternate, cordate, acuminate, glabrous, 7—9-nerved; lateral nerves divided. Stem climbing. Gleditschia.

20—13. Diospyros. 18. 50.

virginiana, (persimon, seeded plum. E. w-y. M. ♄.) leaves ovate-oblong, acuminate, glabrous, reticulate-veined: petioles pubescent: buds glabrous. Var. *pubescens*, leaves oblong, acute, pubescent beneath: petioles long: fruit bearing few seeds. This is made a distinct species by Pursh. *S.* Hippophae.

19—4. Diotis. 12. 29.

Southern.

lanata, Ph. (W. J. ♄.) all over hoary-tomentose: stem flexuous: glomerules of the spikes very crowded. Crotonopsis.

6—1. Diphylleia. 54. 78.

Southern.

cymosa, Mx. (A. w. J. 2f.) very glabrous: leaves sub-palmate, angularly lobed, serrate; lobes acuminate; cyme many-flowered. Amaryllis.

21—2. Diphysicum. 56. 4.

foliosum, stemless: capsule sub-sessile: leaves lance-linear. Buxbaumia.

21—2. Diplocomium. (3) 56. 4.

longisetum, caulescent: leaves gradually narrow-acute; upper ones subulate-acuminate from a broad base: peduncles very long; lid conic: the setaceous teeth of the inner peristome about four times as long as those of the outer peristome. Meesia.

4—1. Dipsacus. 48. 56.

sylvestris, L. (wild teasel. O. b. Ju. ♂.) leaves connate, and opposite, sinuate; chaff straight: head involucred. 3—4 f. *S.*

Exotic.

fullonum, (teasel. w. Ju. ♂.) leaves sessile, serrate: chaff hooked. 3—6 f. Galium.

8—1. Dirca. 31. 25.

palustris, W. (leather-wood, moose-wood, american mezereon. O. y. Ap. ♄.) leaves oval: flowers axillary, 2 or 3 in a hairy bud-like involucre. Small bush: bark very tough. 1—5 f. *S.* Jeffersonia.

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(1) paniculata, Mx. (2) glauca, M. (3) Meesia, H.

5—1. Dodecatheon. 20. 34.

meadia, W. (false cowslip. p. M. 2f.) leaves oblong-oval, repand-toothed: umbels many-flowered, lax: bracts oval. Woods near rivers. 8—10 i. *S.*

integrifolium, Mx. (b. J. 2f.) leaves sub-spatulate, entire: umbels few-flowered, straight: bracts linear. Menyanthes.

16—10. Dolichos. 32. 93.

purpureus, L. (wild cowhage. p. ☼.) twining: stem glabrous: petioles pubescent: corol with spreading wings.

Exotic.

pruriens, (cowage, or cowitch. p. ☼.) twining: leaves hairy beneath: legumes in racemes: valves slightly keeled, hairy: peduncles in threes.

Southern.

luteolus, W. (E. w-y. O. ☼.) climbing, pubescent: leafets ovate, acuminate: peduncles longer than the leaves: spikes short, somewhat capitate: banner broad, reflexed; wings rhomboidal. Trigonella.

17—2. Donia. 49. 55.

Southern.

squarrosa, Ph. (W. y. Au. 2f.) herbaceous: leaves clasping, serrate: scales of the calyx filiform at the apex, squarrose, revolute. Whole plant viscous. 3—4 f. Boebera.

Doronicum, Arnica.

14—1. Draba. 39. 63.

verna, W. (whitlow grass. E. w. Ap. ☼.) scape naked: leaves oblong, acute, sub-serrate, rough-haired: petals bifid: stigma sessile. 2—6 i. *S.*

caroliniana, Wr. (1) (w. A. ☼.) flower-bearing stems naked: leaves oval, acute, very hirsute: silicles long-linear, glabrous, approximate. 1—2 i. *S.*

nivalis, W. (E. ☼.) scape about one-leaved, ascending: leaves lanceolate, very entire, sub-tomentose, with stellate hairs: petals retuse.

glabella, Ph. (E. ☼.) scape about 2-leaved, erect: leaves lance-spatulate, somewhat glabrous: raceme dense-flowered: silicle lance-ovate, acute.

incana, W. (E. J. ♂.) cauline leaves hoary, numerous, with interwoven stellate hairs: silicle oblong, oblique, mucronate with a very short style.

arabisans, Mx. (2) (M. ♂.) stem leafy, rarely branched: radical leaves wedge-lanceolate; cauline ones lanceolate, acute: silicles acuminate with the permanent style. *S.*

alpina, L. (S. A. 2f.) scape naked, simple: leaves lanceolate, entire, spreading: petals sub-emarginate.

hirta, L. (A. w.) scape one-leaved: leaf oblong, acute, dentate, somewhat hirsute: silicle oblique, pedicelled.

Southern.

nemoralis, W. (W. y. M.) sparingly branched: radical leaves spatulate oblong; cauline ones sessile, or clasping, ovate, sub-dentate: silique pubescent. Alyssum.

Dracaena, Convallaria.

13—1. Dracocephalum. 40. 40.

virginianum, W. (dragon-head. W. p. Au. 2f.) spikes elongated, with the flowers crowded: bracts subulate: teeth of the calyx nearly equal, short: leaves linear-lanceolate, serrate. 1—2 f. *S.*

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(1) umbellata, M. hispidula, Mx. (2) Arabis, P.

denticulatum, W. (1) (W. p. Ju. 2f.) spikes elongated, with remote flowers: bracts subulate: teeth of the calyx nearly equal: leaves obovate-lanceolate, toothed above.

Exotic.

canariense, (balm of gilead herb.) flowers spiked: leaves ternate, oblong.

Southern.

variegatum, Vent. (2) (E. p. J.) spikes short, square: bracts ovate, acuminate, as long as the calyx: teeth of the calyx somewhat unequal: leaves closely sessile, oblong-lanceolate, toothed near the summit.

cordatum, N. (W. b. J. 2f.) stem and petioles pubescent: leaves cordate, obtusely crenate, somewhat hirsute above: spikes secund: pedicels 2-bracted.

parviflorum, N. (W. w. Ju. ♂.) flowers verticillate, sub-capitate: leaves ovate-lanceolate, deeply serrate, petioled: bracts foliaceous, ovate, ciliate, serrate; serratures mucronate: teeth of the calyx unequal, scarcely shorter than the corol. Prunella.

Dracontium, ICTODES.

5—1. DROSERA. 20. 68.

rotundifolia, (sun-dew. O. y-w. Au. 2f.) scape simple: leaves nearly orbicular, narrowed at the base: petioles long, downy. Wet or damp. 4—8 i. *S.*

longifolia, (3) (E. y-w. Ju. 2f.) scape simple: leaves spatulate-obovate: petioles long, naked. Wet. 3—6 i. *S.*

filiformis, R. (4) (E. p. J. 2f.) scape sub-ramose, terete, glabrous: leaves very long, filiform: styles 6 to 9. Wet. 1 f.

Southern.

brevifolia, Ph. (E. w-r. J. 2f.) very small: scape rooting, simple: leaves short, wedge-form, scarcely petioled: petals oval.

foliosa, E. (E.) caulescent: leaves crowded, oval, cuneiform at the base, on long naked petioles. 4—6 i. Zanthorhiza.

11—13. DRYAS. 35. 92.

integrifolia, Vahl. (5) (A. w. Ju. 2f.) small-leaved; leaves ovate, acute, cordate at the base, very entire, flat, white-tomentose beneath: peduncles one-flowered.

octopetala, W. (A. w. Ju. 2f.) leaves ovate-oblong, coarsely toothed, rugose, white-tomentose beneath: peduncles one-flowered. Geum.

3—1. DULICHIUM. (6) 3. 9.

spathaceum, Rd. (galingale. O. g-y. Ju. 2f.) stem columnar, 3-cornered above: leaves pointing in three directions: spikelets spreading, somewhat 6-flowered, subulate, in axillary racemes. Var. *canadense*, spikelets few, erect, somewhat 10-flowered. 1—2 f. *S.* Cyperus.

E.

17—5. ECHINOPS. 49. 54.

Exotic.

sphærocephalus, (globe thistle.) leaves pinnatifid: stem branching. Orchis.

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(1) Prasium purpureum, Wr. (2) Prasium incarnatum, Wr. (3) americana, M. (4) tenuifolia, M. (5) tenella, Ph. (6) Schœnus, L. Scirpus, Mx. Cyperus, W.

18—5. ECHITES. 30. 47.

Southern.

difformis, Wr. (E. w-y. M. Au. 2ℓ.) climbing: lower leaves nearly linear; upper ones oval-lanceolate, acuminate: raceme corymbed: stamens included. Amsonia.

5—1. ECHIUM. 41. 42.

vulgare, L. (viper's bugloss, blue thistle. E. b. Ju. ♂.) stem tuberculate-hispid: cauline leaves lanceolate-hispid: spikes lateral: stamens exsert. 2—3 f. *S.* Myosotis.

17—2. ECLIPTA. 49. 55.

Southern.

erecta, W. (O. w. Ju. ☼.) erect, dichotomous, strigose: leaves lanceolate, attenuate at the base, rarely serrate: peduncles by pairs, long: scales of the calyx ovate, acuminate.

procumbens, Mx. (O. w. J. O. ☼?) decumbent or assurgent: leaves long-lanceolate, attenuate at the base: sub-sersate: scales of the calyx lanceolately acute: disk florets 4-cleft. 1—3 f.

brachypoda, Mx. (E. Ju. S.) prostrate, divaricate: leaves lanceolate, sparingly serrulate: peduncles solitary and paired, short: scales of the calyx oval-lanceolate: disk florets 5-cleft. Siegesbeckia.

4—1. ELAEAGNUS. 31. 24.

argentea, Ph. (W. J. ♄.) unarmed: leaves undulate, oval-oblong, rather acute, covered with silvery scales: flowers aggregate, (sub-solitary, Ph.) nodding. *S.* Plantago.

17—5. ELEPHANTOPUS. 49. 55.

carolinianus, W. (1) (elephant-foot. r. Au. 2ℓ.) radical and cauline leaves oblong, narrowed at the base, pilose on both sides: stem erect, pilose, leafy. 2 f. *S.*

Southern.

nudicaulis, E. (2) (E. r. Au. 2ℓ.) radical leaves oval-lanceolate, crenate-serrate, sub-scabrous, hairy beneath: stem hairy, rough, nearly naked. 1—2 f. Echinops.

3—2. ELEUSINE. 4. 10.

indica, Mx. (3) (dog-tail grass, wire grass. E. Ju. ☼.) stipes straight, erect, in pairs or quaternate: rachis linear: spikelets lanceolate, about 5-flowered: culm compressed, declined. 8—12 i. *S.*

Southern.

cruciata, E. (4) (E. Ju. O. ☼.) spikes quarternate, expanding, mucronate: spikelets about 3-flowered: exterior valve of the calyx awned: outer valve of the corol very acute. 12—18 i. Triticum.

Eleusine, OXYDENIA.

8—1. ELLIOTTIA. 18. 51.

Southern.

racemosa, M. (E. w. J. ♄.) leaves alternate, lanceolate, mucronate, entire, short petioled, pubescent and slightly glaucous beneath: racemes terminal. Chrysosplenium.

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(1) scaber, Mx. (2) carolinianus, v. simplex, N. tomentosus, Ph? (3) Cynosurus, L. (4) Chloris mucronata, Mx.

5—1. Ellisia. 41. 42.

Southern.

nyctelea, L. (1) (O. w. & b. J. ☼.) stem decumbent, branching, leafy, brittle: leaves alternate, petioled, pinnatifid, roughish: flowers solitary. 6—8 i.

ambigua, N. (W. b. M. ☼.) stem decumbent, branching, glabrous, somewhat glaucous: leaves hirsute, lyrate-pinnatifid, sub-sessile: divisions sub-lanceolate, angularly toothed or lobed: racemes lateral and terminal. 4—6 i.
Androsace.

Elodea, Hypericum and Serpicula.

3—2. Elymus. 4. 10.

virginicus, L. (E. Ju. 2ſ.) spike erect, compressed: spikelets in pairs, 2—3-flowered; florets smooth: glumes lanceolate, nerved. 3—4 f. *S.*

canadensis, L. (E. Au. 2ſ.) spike nodding at the extremity, patulous: spikelets 3—5-flowered: florets hairy: glumes linear-subulate. Var. *glaucifolius*, leaves glaucous. 3—4 f. *S.*

villosus, M. (E. Ju. 2ſ.) spike a little nodding at the extremity, patulous: rachis and florets hispid, pilose: spikelets geminate, 2—3-flowered: glumes linear, pilose-ciliate, 2-nerved, shorter than the florets. 2—3 f.

hystrix, L. (E. Ju. 2ſ.) spike erect: spikelets diverging: calyx 0. 3 f.

striatus, W. (E. Ju. 2ſ.) spike erect: spikelets 2-flowered, awned, hispid, in pairs: calyx linear, nerved, awned, rather exceeding the spikelets: leaves and sheaths glabrous. 3—4 f. *S.*

Southern.

europeus, L. (E. Ju. 2ſ.) spike erect: spikelets 2-flowered, awned, as long as the smooth involucre.
Melica.

2—1. Elytraria. 40. 36.

Southern.

virgata, Mx. (E. J. 2ſ.) leaves entire near the summit and with the nerves underneath somewhat smooth: scales under the flower ovate, villous along the margin. 12—18 i.
Veronica.

20—3. Empetrum. 18. 51.

nigrum, Mx. (black crowberry. Whitehills. A. ♄.) procumbent: branchlets glabrous: leaves imbricate, oblong, glabrous, with a revolute margin.
Ficus.

21—5. Endocarpon. 57. 2.

hedwigii, Ach. frond sub-cartilaginous, roundish-angled and lobed, somewhat olive-coloured; under side pale at the edge, then dark-coloured and fibrous: the little mouths sub-prominent, dark sooty-yellow. On naked earth, rocks and sides of mountains. Var. *lachneum*, has the frond with aggregated sub-imbricated lobes; margin elevated, repand-lobed, undulated, dark woolly beneath.

muhlenbergii, Ach. frond thick, crusty-cartilaginous, foliaceous, orbicular, peltate, obscurely tawny-green, thin, rugose-plicate, and somewhat in chinks; dark tawny and tubercled beneath: little mouths convex.

miniatum, Ach. frond thick, crusty-cartilaginous, foliaceous, orbicular, peltate, becoming cinereous, repand at the periphery, flexuose-plicate; underneath of a reddish hue. On rocks.

complicatum, Ach. like the last, but of a dark colour underneath.

smaragdulum, Ach. frond composed of very small, detached, scale-like lobes, of a light greenish or olive colour. On rocks.

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(1) Polemonium, L.

tephroides, Var. *polythecium*, Ach. frond adnate like a Verrucaria, cracked, of a bright liver colour.
weberi, Ach. resembles the complicatum, but the frond is of a thicker consistence and changes to a greenish colour when moistened. Porina.

18—5. ENSLENIA. 30. 47.

Southern.

albida, N. (E. Ju. y-w. 2f.) twining: stem marked with an alternating pubescent line: leaves opposite, smooth, cordate-ovate, somewhat acuminate, sinuate at the base: corymbs axillary, many-flowered, long peduncled: pedicels and calyx pubescent. Cynanchum.

18—1. EPIDENDRUM. 7. 21.

Southern.

conopseum, Ai. (E. y. Au.) stem simple: leaves lanceolate, rigid, lucid, perennial: spikes erect: lamina of the lip 3-lobed; middle one retuse: inner petals narrow. Parasitic. Cypripedium.

10—1. EPIGAEA. 13. 51.

repens, L. (trailing arbutus. O. r. & w. Ap. ♄.) stem creeping. branches and petioles very hirsute: leaves cordate-ovate, entire: corol cylindric. Gaultheria.

Epifagus, EPIPHEGUS.

8—1. EPILOBIUM. 17. 88.

spicatum, Lk. (1) (willow herb. O. p. Ju. 2f.) leaves scattered, lance-linear, veiny, glabrous: flowers unequal: stamens declined. 4—6 f.
coloratum, M. (2) (O. r. Ju. 2f.) stem terete, pubescent, leaves lanceolate, serrulate, petioled, opposite; upper ones alternate, glabrous, red-veined. Var. *tetragonum*, has the stem 4-cornered part of its length. 3—4 f. *S.*
lineare, M. (3) (O. w. & r. Ju. 2f.) stem terete, pubescent, wand-like, branched above: cauline leaves opposite, branch-leaves alternate, linear, very entire: flowers few, terminal, long-peduncled. 1—2 f.
molle, T. (E. w-p. Au. 2f.) densely and softly pubescent: stem terete: leaves oblong-linear, sessile, very entire; lower ones opposite; upper ones alternate: flowers pedicelled, sub-terminal, regular. 12—18 i.
alpinum, L. (A. w-r. Au. 2f.) stem simple, sub-terete, 1 or 2-flowered: leaves opposite, oval, entire: flowers sessile. 1—3 i.
palustre, W. (O. Ju. 2f.) stem terete: leaves sessile, lanceolate, sub-denticulate: stigma undivided. Damp. *S.*
latifolium, L. (p. Ju. 2f.) leaves alternate, lance-ovate, nearly entire, pubescent, without veins: flowers unequal. Var. *tetrapetalum*, leaves narrow lanceolate, entire: stem low.
luteum, Ph. (W. y. 2f.) stem 4-cornered, somewhat glabrous: leaves opposite; upper ones alternate, lanceolate, acuminate, serrulate: peduncles axillary, alternate, elongated: divisions of the calyx narrow, as long as the petals: style exsert: stigma thick, 4-lobed. Oxycoccus.

Epipactis, LISTERA.

13—2. EPIPHEGUS, N. (4) 40. 35.

virginianus, (5) (beech drops, cancer-root. O y. p. Ju. 2f.) stem very branching: flowers alternate, distant: calyx short, cup-form, shorter than the cap-

(1) angustifolium, W. (5) levigatum, Le Conte. (3) oliganthum, Mx. rosmarinifolium, Ph. squamatum, N. (4) Orobanche, L. (5) americanus. N.

sule. The whole plant is yellowish-white and of a naked appearance. 8—12 i. *S.* Astringent. B. Orthocarpus.

21—1. Equisetum. 55. 5.

arvense, L. (horse-tail. O. Ap. 2f.) barren stems with simple branches; the branches scabrous, 4-sided: fructification simple: sheaths cylindric, gash-toothed; teeth acute. 8 i. *S.*

hyemale, L. (scouring rush. E. Ju. 2f.) stems erect, very scabrous, bearing spikes at the apex: sheaths 2-coloured, withering at the base and apex: teeth with caducous awns. 2—3 f. *S.*

sylvaticum, L. (O. Ap. 2f.) barren and fertile stems doubly-branched; branches scabrous, deflected, 4-sided; branchlets somewhat 3-sided. *S.*

limosum, T. (Ju.) stems branched upwards, with the branches about 12 in a whorl, simple, pentagonal, smooth. 2—4 f.

scirpoides, Mx. (O. Ju. 2f.) stem simple, ascending, glabrous, filiform, bearing a spike at the top: sheaths 3-toothed; teeth withering, with caducous awns at the apex. 3—6 i.

uliginosum, M. (2f.) stems erect, round, furrowed, nearly smooth, somewhat branched; branches from the middle joints unequal: sheaths serrate above; teeth even, acute, black.

palustre, W. (E. J. 2f.) stem simply ramose, glabrous, sulcate: branches pentagonal, bearing spikes at their apexes.

torreyanum, Stewart. (2f) stems branched; branches thick, roughish, hexagonel, close-pressed to the stem: spike terminal. Perhaps not a distinct species. Isoetes.

2—2. Erianthus. 4. 10.

Southern.

alopecuroides, L. (1) (E. p. S. 2f.) hair-like involucre much longer than the calyx: awns straight. 6—10 f.

brevibarbis, Mx. (E. p. S. 2f.) panicle somewhat spreading: hair-like involucre shorter than the calyx: awns straight. 3—5 f.

strictus, Bald. (E. p. Au.) involucre very short, or none: panicle closely appressed; branches remote: peduncles 2-flowered: awns straight, twice as long as the calyx. 4—6 f.

contortus, Bald. (E. O. 2f.) hairy involucre as long as the calyx: inner valve of the corol eared: awn spirally twisted. Fedia.

8—1. Erica. 18. 51.

Exotic.

pubescens, (downy heath. r. M.) corol linear, pubescent, with the limb erect: capsule glabrous: leaves fringed.

tetralix, (ħ.) anthers awned: corol ovate: style enclosed: leaves in fours, ciliate: flowers in heads. Daphne.

Erigenea, Hydrocotyle.

17—2. Erigeron. 49. 55.

alpinum, W. (E. p. Ju. 2f.) villose: stem generally 1-flowered: calyx villose: rays spreading: leaves lanceolate, obtusish. 2 i.

bellidifolium, W. (2) (O. b. & w. M. 2f.) hirsute, hoary: radical leaves obovate, sub-serrate; cauline ones few, distant, lanceolate, sessile, entire: stem about 3-flowered: rays long. 12—18 i. *S.*

integrifolium, Bw. (E. w. Ju. 2f.) stem simple, leafy, smooth: leaves lanceo-

(1) [illegible]roides, Mx. Anthoxanthum giganteum, Wr. Andropogon, L. Saccharum giganteum, Ph. (2) pulchellum, Mx.

late, entire, 3-nerved : flowers corymbed : calyx hemispherical : scales acute. 2 f.

purpureum, W. (O. p. Ju. 2f.) pubescent : leaves oblong, toothed, clasping ; upper ones entire : peduncles thickened, corymbed ; lower ones elongated : scales of the calyx hairy on the keel ; rays twice as long as the calyx. 2 f. *S.*

compositum, Ph. (W. w-r. Ju. 2f.) pilose, somewhat stemless : radical leaves long-petioled, thrice 3-parted ; divisions linear, divaricate ; cauline leaves linear, generally undivided : stem naked above, 1-flowered. 8 i.

philadelphicum, W. (O. b-p. Au. 2f.) pubescent : leaves wedge-oblong, rarely gash-toothed ; cauline ones half-clasping : stem weak, simple, corymbed above : peduncles elongated, 1-flowered : rays capillary, twice as long as the hemispherical calyx. 1—3 f. *S.*

strigosum, W. (O. w. Ju. ♂.) strigose-pilose : leaves lanceolate, tapering to both ends : in the middle are a few coarse teeth, or it is entire : flowers corymb-panicled. 2—3 f. *S.*

heterophyllum, L. (1) (E. w. J. ♂.) radical leaves round-ovate, deeply-toothed, petioled ; cauline ones lanceolate, acute, serrate in the middle : corymb terminal. 2—3 f.

nervosum, W. (2) (y. w. Ju. 2f ?) white-pubescent : leaves lance-linear, very entire, silky, nerved : flowers panicled.

hyssopifolium, Mx. (y. Ju. 2f.) stem panicled, with sterile branches, a few of them protracted into naked peduncles : leaves linear, glabrous, ciliate : rays much longer than the cylindric calyx.

canadense, L. (flea-bane, pride-weed. O. w. Ju. ☼.) stem hispid, panicled : leaves lance-linear, ciliate : calyx cylindric : rays crowded, short. Var. *grandiflorum*, rays yellowish, flowers very large, short peduncled, crowded, terminal and axillary. Var. *pusillum*, low, smoothish : leaves lance-linear, entire, scabrous along the margin. This last variety is made a distinct species by Mr. Nuttall. 4 i.—3 f. *S.*

Southern.

pumilum, N. (3) (W. w. 2f.) hirsute : stems simple, 1-flowered : leaves linear, entire, sessile, without nerves : calyx hirsute. 4—5 i.

nudicaule, Mx. (E. w. y. J. 2f.) glabrous : radical leaves lance-spatulate, acute, slightly toothed : stem simple, nearly leafless, long : terminal corymb few-flowered : rays as long as the involucre. 2 f.

quercifolium, Lk. (E. b. w. Ju. 2f.) finely pubescent : leaves lanceolate, acute : radical ones somewhat lyrate, coarsely toothed ; upper ones entire : stem sub-simple, few-flowered (3,) at the summit : rays twice as long as the calyx. Elliott thinks this and the philadelphicum may be the same. 8—10 i.

longifolium, Lk. (E. y. Au.) very glabrous : stem virgately panicled : branches straight : leaves very long-linear, straight : calyx ovate : rays scarcely longer than the calyx. Does it belong to this genus? E.

ambiguum, N. (E. w-y.) pubescent, somewhat scabrous : leaves linear ; lower ones slightly serrulate : flowers small, generally in pairs, axillary and terminal : calyx hemispherical. 18 i.

asperum, N. (W. w. Au.) hirsute-scabrous : stem slender, about 2-flowered : leaves lanceolate, acute, entire : calyx hemispherica l. 12 i.

glabellum, N. (W. w-b. Au. 2f.) leaves lance-linear, smooth, acute ; radical ones long-petioled, lance-spatulate, nerved : stem pubescent above, 3—5-flowered : calyx pubescent. 12—18 i.

divaricatum, Mx. (W. Au. ☼.) decumbent, divaricate-branching : panicles sub-fastigiate : leaves subulate : florets of the disk 4-cleft. Chrysopsis.

21—6. ERINEUM. 58. 1.

acerinum, depressed, broadish, reddish-tawny ; at first thick-clotted and pale.

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(1) Aster annuus, L. (2) strigosum? E. (3) uniflorum, W ? hirsutum, Ph.

fagineum, sub-immersed, compact, sub-elliptic, chesnut-brown.
pyrinum, oblong, lax, chesnut-brown. Racodium.

19—4. ERIOCAULON. 6. 13.

pellucidum, Mx. (pipe-wort. O. g. Au. 2f.) scape very slender, about 7-striped: leaves linear-subulate, channelled, glabrous, pellucid, 5-nerved, transversely-striate: head small, globose: scales of the involucre oval-obtuse. Grows in water. 6—12 i.
decangulare, Mx. (1) (tall pipe-wort. E. w. S. 2f.) scape 10-striped: leaves ensiform, glabrous: heads large, depressed-globose: scales of the involucre ovate, acute: chaff of the receptacle mucronate. 3—4 f. *S.*
flavidulum, Mx. (Ju. ☼. or 2f.) scapes numerous, about 7-furrowed, sub-pubescent: leaves short, subulate-ensiform: head convex: scales of the involucre roundish. 2—4 i. *S.*
gnaphalioides, Mx. (2) (Ju. 2f.) scape sub-compressed, with 10 grooves: leaves short, subulate, ensiform, glabrous: heads hemispheric-convex: the involucre consists of shining scarious, oval, round-obtuse scales. 10—14 i. *S.*

Southern.

villosum, Mx. (E. M. S. 2f.) scapes numerous, compressed, about 4-furrowed, villous: leaves short, subulate, linear, hairy: head small spherical. Corol nearly black. 12 i. Alnus.

3—1. ERIOCOMA. 4. 9.

Southern.

membranacea, Ph. (3) (W.) leaves convolute-filiform, glabrous: panicle lax: pedicels flexuose: scales of the calyx membranaceous, 3-nerved, long-acuminate: corol shorter than the calyx, silky-villose, hairs exceeding the corol: awn naked, straight, a little longer than the calyx. Dichromena.

9—2. ERIOGONUM. 12. 23.

parvifolium, S. (W.) calyx naked: cauline leaves petioled, alternate, ovate, revolute, shining above, rusty tomentose beneath.
latifolium, S. (W.) calyx naked: cauline leaves alternate, petioled, cordate, undulate, white-downy above, white-woolly beneath: petioles clasping.

Southern.

tomentosum, Mx. (E. Ju. 2f.) leaves oval, wedge-form at the base, glabrous above, white-downy beneath; cauline leaves in threes and fours: fascicles of flowers axillary, solitary, sessile. 2 f.
sericeum, Ph. (4) (W. y. Ju. 2f.) stem simple, naked: flowers fascicled, in terminal umbels, peduncled; umbel involucred: divisions of the calyx oblong, acute, silky-lanate: radical leaves petioled, lance-oblong, villose above.
pauciflorum, Ph. (W. w. 2f.) stem simple, leafy at the base: umbel few-flowered: flowers sub-sessile: leaves lance-linear, hoary-tomentose on both sides.
tenellum, T. & J. (W. 2f.) stem dichotomous, naked, slender, very glabrous: branches elongated, bearing fascicles of flowers at their extremities: flowers very minute: divisions of the calyx roundish, obtuse, glabrous: leaves ovate, sub-cordate, white-downy beneath, (both sides when young) pubescent above. 12 i.
umbellatum, T. & J. (W. 2f.) stem naked, simple: peduncles elongated, (about in sixes) umbelled, bearing a single involucre at the apex: calyx glabrous; divisions obovate, narrow at the base, obtuse: leaves obovate-spatulate, woolly beneath, somewhat glabrous above. 8 i. Pleea.

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(1) serotinum, Wr. (2) decangulare, Wr. compressum, Lk. (3) cuspidatum, N. Stipa, Ph. (4) flavum, N.

3—1. ERIOPHORUM. 3. 9.

1. *Spike solitary.*

alpinum, L. (1) (E. Au. 2f.) culm triquetrous, somewhat scabrous, naked: leaves very short, subulate: spike oblong: woolly hairs crisped, few. 8—10 i.

vaginatum, L. (2) (E. Ju. 2f.) culm terete below, obtusely-triangular above, smooth and rigid: sheaths inflated: spike oblong-ovate: glumes scarious: wool straight, dense. 12 i.

2. *Spikes numerous.*

polystachyon, L. (3) (E. Ju. 2f.) leaves flat, triquetrous at the extremities: culm nearly terete: spikes nodding: peduncles scabrous. 18—24 i.

virginicum, L. (E. J. 2f.) culm nearly terete below, obtusely triangular above: leaves flat, very long: spikes clustered, erect, sub-sessile: involucre 2—3-leaved. Var. *gracile*, culm very slender, leaves almost filiform. 2—4 f. *S.*

angustifolium, Roth. (E. J. 2f.) culm somewhat triangular: leaves channelled, triquetrous: peduncles very smooth. Var. *megastachyon*, culm somewhat triangular, short: involucre longer than the umbel: spikes peduncled, very large. Dr. Torrey thinks the E. *angustifolium* of Wild. is not found in this country, and the one so called by authors is a variety of the E. *polystachyon*. Fuirena.

15—5. ERODIUM. 14. 73.

Exotic.

ciconium, (stork-bill geranium. ☼.) peduncle many-flowered: leaves pinnate: leafets pinnatifid, toothed: petals oblong, obtuse: stem ascending.

cicutarium, (hemlock geranium. p. Ap. ☼.) peduncles many-flowered: leaves pinnate; leafets sessile, pinnatifid, gashed: corol larger than the calyx: stem prostrate, hirsute.

moschatum, (musk geranium. ☼.) peduncles many-flowered: leaves pinnate: leafets sub-petioled, oblong, gash-toothed: petals equalling the calyx: stem procumbent. Philoxerus.

16—10. ERVUM. 32. 93.

hirsutum, W. (4) (creeping vetch. L. p. J. ☼.) peduncles many-flowered: legumes hirsute, 2-seeded; leafets linear, truncate.

tetraspermum, W. (5) (E. b. J. ☼.) peduncles mostly 2-flowered: legume smooth, 4—5-seeded: leaves oblong, truncate. Orobus.

5—2. ERYNGIUM. 45. 60.

aquaticum, Ju. (6) (button snake root. E. w-b. Ju. 2f.) leaves ensiform, fringed with soft spines; floral leaves undivided, very short. 3—4 f. *S.*

virginianum, Lk. (7) E. g. & b. Ju. 2f.) very tall: leaves long-lanceolate, serrate: involucre much longer than the heads: chaff 3-cuspidate. 4—6 f. *S.*

ovalifolium, Mx. (8) (sea-holly. L. b. Ju. 2f.) leaves spatulate-ovate, irregularly toothed: heads shorter than the involucre: chaff equally 3-cuspidate. 2—3 f. *S.*

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(1) hudsonianum, Mx. Trichophorum, Ph. (2) cespitosum, Ph. (3) tenellum, N. angustifolium, Bw.? (4) Vicia mitchilla, R. (5) vicia pusilla, M. (6) yuccifolium, Mx. (7) aquaticum, Mx. (8) virgatum, Lk. integrifolium, Wr.

Southern.

foetidum, W. (E. Ju. 2f.) radical leaves lanceolate, serrate; floral leaves many-cleft: stem dichotomous. 1 f.

aromaticum, Bald. (E. S. O. 2f.) stem leafy: leaves cuspidate, pinnate, 3-cleft at the summit, cartilaginous along the margins: involucre 5-leaved: leaves 3-cleft: chaff 3-pointed. 9—10 i.

gracile, Bald. (E. Ju. ☼.) leaves petioled, oval, entire: stem branching, slender: heads numerous, very small: involucre 2-leaved, 3-cleft, linear.

plukenetii, E. (E. w-b. J.) leaves long, linear-lanceolate, serrate: involucre 8-leaved, longer than the head: leafets dissected: chaff 3-awned. 2 f.

diffusum, T. & J. (W. w? ☼.) stem dichotomous-branched, diffuse: leaves all digitate-palmate; divisions oblong, gash-serrate, spinous: little heads subglobose: leafets of the involucre 4—6, 3-cleft, gash-serrate, longer than the heads: germ squamose. 6—8 i. Heracleum.

14—2. ERYSIMUM. (1) 39. 63.

nasturtium, L. (2) (english water-cress. E. w. J. 2f.) silique short, declined: leaves pinnate; leafets roundish, repand, sparingly toothed. *S.*

palustre, L. (3) (E. y. Ju. ☼.) leaves lyrate-pinnatifid; lobes confluent, unequally dentate, smooth: petals about the length of the calyx: siliques short, turgid. 12—18 i. *S.*

amphibium, W. (4) (water radish. O. y. J. 2f.) silique (or rather silicle) oblong-ovate, declined: leaves lance-oblong, pinnatifid or serrate: petals longer than the calyx. Wet. 1—2 f. *S.*

vulgare, P. (creeping water-cress. E. y. J. 2f.) silique declinate: leaves pinnate; leafets lanceolate, gash-serrate.

Southern.

walteri, E. (E. y. Feb.—M. 2f.) branching, procumbent: leaves pinnatifid; segments obtuse, sinuate-dentate; upper ones confluent: pods short, generally erect. Perhaps a variety of the palustre. 6—14 i. Cheiranthes.

Erysimum, SISYMBRIUM, BARBAREA.

16—10. ERYTHRINA. 32. 93.

Southern.

herbacea, W. (E. r. M. 2f.) small: leaves ternate; leafets rhomboidal, glaucous: spikes very long: stem herbaceous, prickly. 2—4 f. Cichorium.

6—1. ERYTHRONIUM. 11. 14.

americanum, S. (5) (dog-tooth violet, adder's-tongue. O. y. Ap. 2f.) leaves lance-oval, punctate: petals oblong-lanceolate, obtuse at the point; inner ones 2-dentate near the base: style clavate; stigma entire. (stigmas 3, Elliott.) 6—8 i. *S.*

albidum, N. (b-w. Ap. 2f.) leaves elliptical-lanceolate, not punctate: petals linear-lanceolate, obtuse; inner ones without dentures, sub-unguiculate. style filiform: stigma 3-cleft, lobes reflexed. 6—8 i. *S.*

bracteatum, Boot. (A. y. J. 2f.) scape bracted, shorter than the leaves: leaves lanceolate, very unequal: style clavate: stigmas united?

grandiflorum, Ph. (W. w-y. J. 2f.) petals lanceolate, sub-unguiculate, acute: germ oblong: leaves linear-lanceolate. A species not satisfactorily defined, N. Uvularia

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(1) Sisymbrium of Authors. (2) Nasturtium officinale, T. (3) terrestre, S. Nasturtium, T. (4) Nasturtium, T. (5) lanceolatum, Ph. longifolium, Pt. dens-canis, W.

Erythrorhiza, GALAX.

13—2. EUCHROMA. (1) 40. 40.

coccinea, W. (painted cup. O. y. & r. J. ♂.) leaves alternate, linear, gash-pinnatifid; divisions linear: bracts dilated, generally 3-cleft, longer than the flowers: calyx 2-cleft, about equal to the corol; divisions retuse, emarginate. Flowers yellow, with scarlet bracts. One variety, *pallens*, has yellow bracts. 10—16 i. *S.*

Southern.

grandiflora, N. (W. g-w. M. 2f.) leaves and bracts mostly 3-cleft; segments divaricate: calyx 4-cleft, partly oblique: corol longer than the calyx; divisions of the lower lip acuminate. Bracts not coloured. Bartsia.

5—1. EUONYMUS. 43. 95.

atropurpureus, Ju. (spindle tree. O. p. J. ♄.) leaves petioled, lance-oblong, acuminate, serrate: peduncles divaricate, many-flowered; flowers 4-cleft: fruit smooth. Fruit red. 4—5 f. *S.*

americanus, W. (burning bush. E. r-y. J. ♄.) branches 4-angled, smooth: leaves sub-sessile, lance-oval, acute, serrate: peduncles about 3-flowered; flowers all 5-cleft: fruit warty-muricate. Fruit red. Var. *sarmentosus*, N. stem sarmentose, often rooting, acutely 4-angled: leaves sub-sessile, opaque, lance-oval, acute, obtusely serrate; serratures generally undulate. 3—4 f. *S.*

obovatus, N. (W. p-g. J. ♄.) stem prostrate, rooting; twigs erect, obtusely 4-cornered, with four distinct lines: leaves broad-obovate, obtuse, acute at the base, sub-sessile, acutely serrate, flat: peduncles 3-flowered. Stamens, as well as petals, sometimes but 4. 1 f. *S.*

Southern.

angustifolius, Lyon. (E. Ju. ♄.) branches 4-angled: leaves long-linear-elliptic, somewhat ensiform, nearly entire: peduncles about 1-flowered: flowers all 5-cleft: fruit roughened, warty. A doubtful species. Elliott.

Celastrus.

17—1. EUPATORIUM. 49. 55.

1. *Calyxes not more than 5-flowered.*

hyssopifolium, L. (hyssop thorough-wort, hemp-weed. E. w. Au. 2f.) stem erect: lowest leaves opposite, lance-linear, sub-dentate: corymb sub-fastigiate: style much longer than the corol. 2 f. *S.*

linearifolium, Wr. (E. w. S. 2f.) stem sub-procumbent, villous towards the summit: cauline leaves opposite, lance-linear, rarely dentate, sometimes clustered: style as long as the corol. 1—2 f. *S.*

sessilifolium, W. (O. w. Au. 2f.) leaves sessile, clasping, distinct, lance-ovate, rounded at the base, serrate, very glabrous: stem somewhat glabrous. 2 f. *S.*

truncatum, W. (w. Ju. ♄.) leaves sessile, clasping, distinct, lanceolate, truncate at the base, serrate, somewhat glabrous: stem pubescent. *S.*

album, L. (Au. 2f.) leaves sub-sessile, lance-oblong, roughish, serrate; inner scales of the calyx long, lanceolate, scarious, coloured. 18—24 i. *S.*

lanceolatum, W. (Au. 2f.) leaves sessile, distinct, lance-oblong, scabrous, deeply serrate at the base: scales of the calyx one-coloured. *S.*

verbenaefolium, Mx. (2) (E. w. Au. 2f.) leaves sessile, distinct, lance-ovate, rugose, scabrous; upper ones with coarse teeth at the base, and with the summit entire. 2 f. *S.*

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(1) Bartsia, L. (2) teucrifolium, W. pilosum, Wr.

melissioides, W. (E. w. Au. 2f.) leaves petioled, ovate, obtusish, obtusely-serrate, veiny, somewhat glabrous. 1—2 f.

rotundifolium, W. (w. Au. 2f.) leaves sessile, distinct, deltoid, roundish, somewhat glaucous, obtusely-serrate, veiny: scales of the calyx acuminate. 12—18 i. *S.*

pubescens, W. (1) (E. w. Au. 2f.) leaves sessile, distinct, ovate, sub-scabrous, veiny; lower ones doubly-serrate, upper ones sub-serrate: stem panicled, pubescent: branches fastigiate. 18—24 i. *S.*

altissimum, W. (w. Au. 2f.) leaves sub-sessile, lanceolate, 3-nerved, tapering to both ends, pubescent; lower ones serrate in the middle. 3—7 f. *S.*

amoenum, Ph. (A. p. S. 2f.) leaves with short petioles, opposite and in threes, lance-oblong, acute at both ends, serrate, sub-glabrous, sub-rugose, net-veined beneath: corymb fastigiate, crowded: scales of the calyx oblong, coloured, acutish. 2 f.

trifoliatum, W. (2) (p. Au. 2f.) leaves petioled, in threes or fours, ovate and oval, acuminate, serrate, pubescent beneath, punctate. 3—4 f. *S.*

2. *Calyxes more than 5-flowered.*

ceanothifolium, W. (Au. 2f.) leaves petioled, ovate, acuminate, toothed, 3-nerved, somewhat glabrous: calyxes 5—10-flowered. 2 f. *S.*

purpureum, L. (purple thorough-wort, joe-pye. O. p. Au. 2f.) leaves in fours or fives, petioled, lance-ovate, serrate, rugose-veined, roughish: stem hollow. Var. *laevigatum*, calyx about 5-flowered: leaves in fives, petioled, lanceolate, very glabrous both sides, slender: stem hollow, smooth, sub-glaucous. 4—6 f. *S.*

maculatum, W. (E. p. Au. 2f.) leaves in fours or fives, lance-ovate, unequally serrate, pubescent beneath: stem solid, furrowed. 4—5 f. *S.*

verticillatum, W. (joe-pye's weed. E. p. Au. 2f.) leaves petioled, in threes or fours, lance-ovate, acuminate at each end, unequally serrate, somewhat glabrous: stem solid, smooth. 4—6 f. *S.*

punctatum, W. (O. p. Au. 2f.) leaves in fours or fives, petioled, ovate, acuminate, serrate, scabrous both sides: stem solid, terete. Is this a variety of the last? N. 3—5 f.

perfoliatum, (3) (boneset, thorough-wort. O. w. Au. 2f.) leaves connate-perfoliate, oblong-serrate, rugose, downy beneath: stem villose. 2 f. *S.*

coelestinum, W. (E. b. Au. 2f.) leaves petioled, heart-ovate, obtusish, 3-nerved, obtusely-serrate, slightly scabrous: calyx many-leaved, many-flowered: (30—40) receptacle conic. 2—3 f. *S.*

ovatum, B. (E. w. Au. 2f.) hairy, scabrous: leaves opposite, sessile, ovate, obtusely dentate: corymb fastigiate: calyxes about 8-flowered. 3—4 f.

aromaticum, Mx. (4) (E. w. S. 2f.) leaves petioled, cordate-ovate, (ovate, Ph.) acute, 3-nerved, obtusely serrate, somewhat scabrous: flowers corymbed: scales of the calyx sub-equal. 2 f. *S.*

ageratoides, W. (5) (O. w. Au. 2f.) leaves petioled, ovate, acuminate, 3-nerved, unequally and coarsely toothed, serrate, glabrous: corymb many-flowered, spreading: calyx simple. 2—3 f. *S.*

Southern.

foeniculaceum, W. (6) (E. y-w. S. 2f.) stem panicled: leaves glabrous; lower ones pinnate; upper ones clustered; all filiform. 3—10 f.

coronopifolium, W. (7) (E. w. S. 2f.) stem panicled: lower leaves pinnatifid; divisions lance-linear, denticulate; upper leaves undivided, linear, clustered; all punctate, pubescent. 3—4 f.

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(1) glandulosum, Mx. (2) ternifolium, G. E. (3) connatum, Mx. (4) cordatum, Wr. (5) urticaefolium, Mx. Ageratum altissimum, L. (6) foeniculoides, Wr. Chrysocoma capillacea, Mx. (7) compositifolium, Wr. Chrysocoma coronopifolia, Mx.

cuneifolium, W. (E. w.) leaves petioled, obovate-lanceolate, slightly serrate at the summit, 3-nerved, pubescent on both sides. 1 f.

falcatum, Mx. (W. 2ℓ.) without hair: leaves in fours, lance-oval, acuminate at each end, sub-falcate, sparingly serrate: outer scales of the calyx short, oval.

pinnatifidum, E. (E. w. S. 2ℓ.) leaves pinnatifid; lower ones verticillate; upper ones alternate; divisions linear, pubescent: flowers corymbed. 3—4 f.

glaucescens, E. (E. w. S.) leaves nearly sessile, lanceolate, obtusely serrate, entire at the base, 3-nerved, somewhat glaucous, pubescent: flowers corymbed. 2 f.

parviflorum, E. (E. w. S.) leaves sessile, narrow-lanceolate, very acutely serrate, pubescent on both sides: flowers corymbed, small: seeds angled. 2 f.

serotinum, Mx. (E. w. S.) leaves petioled, lance-ovate, tapering towards the summit, acute, coarsely and acutely serrate, 3-nerved, pubescent: scales of the calyx imbricate. 5—6 f.

incarnatum, Wr. (E. p. O.) leaves long-petioled, deltoid, cordate, acute, obtusely toothed, 3-nerved, thin, nearly glabrous: scales of the calyx nearly equal. 2 f. Mikania.

19—12. EUPHORBIA. 38. 96.

1. *Flowers with involucred umbels.* (1)

corollata, W. (O. Ju. 2ℓ.) umbel 5-cleft, 3-cleft, and dichotomous: involucels and leaves oblong, obtuse: petals obovate, and resembling appendages of the calyx. Var. *angustifolia*, E. leaves linear-lanceolate, sessile, paler and hairy beneath: umbel 3-cleft: rays elongated: upper branches dichotomous. 1—2 f. *S.*

peplus, W. (wild caper. Ju. ☼.) umbel 3-cleft, dichotomous: involucels ovate: leaves entire, obovate, petioled. *S.*

obtusata, Ph. (W. Ju. 2ℓ.) umbel 3-rayed, twice dichotomous: involucels ovate, obtusish, sub-cordate: leaves alternate, sessile, spatulate, serrulate, smooth: capsule muricate. 12—18 i. *S.*

mercurialina, Mx. (Ju. 2ℓ.) stem slender, weak, simply 3-cleft: leaves opposite and ternate, sub-sessile, oval, entire: peduncles terminal, solitary, 1-flowered. *S.*

pilosa, W. (O. Ju. 2ℓ.) umbel with 5 primary rays, bifid: involucels ovate: leaves lanceolate, somewhat hairy, serrulate at the extremity: petaloid segments of the involucre entire. 1—2 f. *S.*

helioscopia, L. (E. ☼.) umbel with 5 primary rays, bifid: involucels obovate: leaves wedge-form, serrate, glabrous: capsules smooth. 12—18 i.

2. *Flowers not in involucred umbels.*

hypericifolia, W. (spurge. E. Ju. ☼.) dichotomous, glabrous, very branching, sub-erect, spreading: leaves opposite, serrate, oval-oblong, sub-falcate, short-petioled: corymb terminal and axillary. Var. *hirsuta*, T? stem slender, hairy: leaves oblong, smooth, serrulate. 12—18 i. *S.*

maculata, L. (E. Ju. O. ☼.) stem procumbent, branching, hairy: leaves opposite, oval or oblong, serrulate, oblique at the base, short petioled, smooth above, hairy and pale beneath: flowers solitary and axillary, much shorter than the leaves. 6—12 i. *S.*

polygonifolia, Jn. (Ju. 2ℓ.) very glabrous, diffused, succulent: leaves opposite, entire, lance-linear, obtuse at the base: flowers solitary, axillary: stipules simple.

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(1) This section comprises the genus Esula, 2d Ed.

peplacantha, (E. Ju. ♃.) procumbent, small, glabrous: leaves opposite, oboval or lanceolate: peduncles axillary, elongated, 1-flowered. *S.*

portulacoides. Ph. (Ju ♃.) erect: leaves entire, oval, retuse: peduncles axillary: 1-flowered, as long as the leaves. A variety of the corollata? *T. S.*

serrata. Mx. (Ju. ☼.) hairy: leaves opposite, oval, dentate: flowers crowded at the summit of the stem. *S.*

Exotic.

Lathyrus, (spurge caper. J. ♂.) umbel 4-cleft, dichotomous: leaves opposite, entire, lanceolate, pointing four ways.

Southern.

cyathophora, W. (O. Ju. ☼.) somewhat shrubby: leaves petioled, ovate, slightly toothed, panduriform; upper ones and involucres coloured: flowers sub-umbelled. 2 f.

graminifolia, Mx. (L.) small, erect, branching from the base, finely pubescent: leaves scattered, linear, entire; upper ones discoloured at the base: flowers fascicled; terminal.

hymifolia, L. (O.) procumbent, slender, pubescent: leaves opposite, oval-oblong, obtuse, slightly serrate near the summit. heads axillary, clustered, nearly sessile.

pubentissima. Mx. (E. w. Ju. ♃.) erect, very pubescent: stem somewhat dichotomous: leaves opposite, sessile, oval, sub-cordate, obtuse: peduncles solitary.

marginata, Ph. (W. w. Ju. ☼.) umbel 3-cleft, twice dichotomous: involucre leaf-like; involucels oblong, cordate, coloured, membranaceous at the margin: leaves lance-oblong, sub-cordate-clasping, acute, becoming glaucous, glabrous: petal like appendages of the calyx roundish: capsules pilose.

corallifolia, E. (E. w. sl. ☼.) procumbent, glabrous, branching: leaves small, opposite, broad-oval, entire, cordate at the base: flowers axillary, solitary. 8—15 i.

gracilis, E. (E. J. ♃.) stem erect, dichotomous, glabrous: leaves opposite, remote, sessile, lance-linear: peduncles solitary in the divisions of the stem, longer than the leaves. 12 i.

paniculata, E. (E. Au.) umbel 3-cleft, dichotomous: flowers terminal, somewhat panicled, oval, sessile, slightly hairy beneath: stem sometimes hairy. 1—2 f.

hexagona, N. (W.) tall, slender, very branching: leaves linear: flowers in axillary clusters. Poterium.

13—2. EUPHRASIA. 40. 35.

officinalis, W. (eyebright. w. Ju. ☼.) leaves ovate, obtusely toothed: lower divisions of the lip emarginate.

latifolia, W. (A. p. Ju. ☼.) leaves ovate, tooth-palmate: flowers spiked: corol tubular: divisions of the lower lip obtuse. Labrador.

Lantana.

21—5. EVERNIA. 57. 2.

prunastri, Ach. frond granulated, glaucous above, whitish beneath, reticulated. Branches of trees. Rare.

vulpina? Ach. frond yellowish green, branching; segments attenuated, lacunose, compressed. In appearance like *cenomyce uncialis*, but easily distinguished by its central cotton-like medulla. Perhaps a new species. *Halsey.* Cenomyce.

5—2. EVOLVULUS. 29. 43.

Southern.

argenteus, Ph. (W. p. M. ♃.) stem simple erect: leaves oblong, acute, silky-tomentose on both sides: peduncles 1-flowered, short.

nummularis, (W. ☼.) leaves roundish: stem creeping: flowers sub-sessile.

sericeus, Sw. (1) (O. ☼.) leaves lanceolate, sessile, silky beneath: peduncles short, 1-flowered. Heuchera.

4—1. EXACUM. 47. 46.

pulchellum, Ph. (L. r. Au. ☼.) corol 4-cleft: calyx 4-parted; divisions subulate: panicle corymbed: peduncles filiform. Swertia.

F.

19—12. FAGUS. 50. 99.

ferruginea, A. (red beach. O. y-w. M. ♄.) leaves ovate-oblong, acuminate, pubescent beneath, coarsely toothed, at the base obtuse, sub-cordate-oblique: nuts ovate, acutely 3-sided.

sylvatica, Var. *americana*, (white beach. O. y-w. M. 2ℓ.) leaves ovate, acuminate, slightly toothed, ciliate at the margin, acute at the base: nuts ovate, 3-sided, obtuse mucronate. *S.* Castanea.

3—1. FEDIA. 48. 56.

radiata, Mx. (2) (wild lamb lettuce. O. w. J. ☼.) leaves spatulate-oblong, subentire: fruit pubescent, about 4-sided, naked at the apex. 8—18 i. *S.*

Exotic.

olitoria, (lamb lettuce.) stem dichotomous: leaves lance-linear.

Southern.

chenopodifolia, Ph. (E. ☼.) dichotomous: leaves ovate, acute, dentate below: cyme naked, divaricate-dichotomous: filaments long. 8 i. Iris.

5—2. FERULA. 45. 60.

villosa, Wr. (w. Ju. 2ℓ.) leaves more than decompound; divisions ternate: leafets ovate, serrate, rigid, veiny: stem, peduncles, and umbels, villous. *S.*

Southern.

foeniculacea, N. (W. y. M. 2ℓ.) stemless, pubescent: leaves more than decompound, somewhat biternate-pinnate; primary divisions decussate at the base: segments shortish, narrow-linear, acutish; ultimate divisions 3-cleft: involucel halved, 5—7-lobed. 1 f.

nudicaulis, Ph. (3) (W. w. M. 2ℓ.) leaves radical, thrice ternate; leafets unequally-sparingly toothed: ray umbels elongated: involucre and involucel nearly wanting: scape radical. Anethum.

3—2. FESTUCA. (4) 4. 10.

elatior, (fescue-grass. O. J. 2ℓ.) panicle spreading, very branching, lax: spikelets ovate-lanceolate, 4—5-flowered; florets slightly armed: leaves flat: root creeping. 3—4 f.

myurus, L? (E. J. ☼. ♂. M.) panicle slender, crowded, equal: spikelets about 4-flowered: florets subulate, awned, hairy, monandrous. 6—12 i. *S.*

tenella, W. (5) (E. J. ☼.) panicle spiked, very simple, one-sided: spikelets about 9-flowered: bristles shorter than the subulate florets: culm filiform, angular above: leaves setaceous. 8—15 i. *S.*

duriuscula, L. (E. J. 2ℓ.) panicle one-sided, oblong, contracted: spikelets 5—6-flowered, nearly terete: florets terminated by short bristles: root fibrous. Perhaps introduced. 12—18 i. *S.*

rubra, L? (J. 2ℓ.) panicle one-sided, erect, spreading: spikelets teretish:

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(1) nuttallianus, R. (2) Valeriana, W. Ph. (3) Smyrnium, Ph. (4) Schenodorus, R. & S. (5) bromoides, Mx. octoflora, W.

florets longer than the bristle at their tips: leaves pubescent above: root creeping. 18 i.

pratensis, Hd. (J. 2f.) panicle spreading, branched: spikelets linear, many-flowered, acute: leaves linear: root fibrous. 1—2 f.

poaeoides, Mx. (E.) panicle somewhat crowded; lower branches simple: spikelets alternate, oblong, sub-sessile, unarmed: leaves flat, very glabrous.

nutans, W. (E. J. 2f.) panicle diffuse, at length nodding: branches long, in pairs, naked below: spikelets ovate, 3—5-flowered: florets somewhat obtuse, unarmed, nerveless. 3 f. *S.*

fasciculatis, Lk. (1) (E. Au. ☼.) culm procumbent, geniculate: panicle subsecund: branches straight, spike-like: spikelets appressed, 8—10-flowered: florets armed: leaves very long. 1 f. *S.*

clandestina, M. (E.) panicle partly concealed in the sheaths: branches solitary, simple: spikelets 10-flowered; florets awned. 8 i.

Southern.

spicata, Ph. (W. J.) spikelets alternate, sessile, erect, somewhat 5-flowered: florets subulate, sub-glabrous, with a long, scabrous awn: linear leaves and culm glabrous.

grandiflora, Lk. (E.) panicle simple, erect: spikelets very few, generally 7-flowered: florets acute, distant.

parviflora, E. (E. Ap. 2f.) panicle equal, slender, appressed: spikelets terete-subulate, 5-flowered, awned: calyx unawned. 12—18 i. Ceratochloa.

Festuca, Glyceria, Diarrhena, Uniola, Ceratochloa.

20—3. Ficus. 53. 98.

Exotic.

carica, (fig-tree. g. Ju. ♄.) leaves cordate, 3 or 5-lobed, repand-toothed: lobes obtuse, scabrous above, pubescent beneath. 5—8 f. Myrica.

3—1. Fimbristylis. (2) 8. 9.

spadiceum, (E. Ju. 2f.) spikes ovate-lanceolate: involucre rigid, with one leaf longer than the umbel: leaves subulate, teretish, striate. 2—3 f. *S.*

ferrugineum, (3) (E. M. 2f.) stem compressed: angles near the summit scabrous: leaves concave, those of the involucre unequally ciliate: spikes lanceolate, roundish. 1—3 f. *S.*

Southern.

castaneum, Mx. (E. Ju. 2f.) spikes ovate-oblong, obtuse: involucre 2-leaved, rigid, as long as the compound umbel.

cylindricum, (2f.) spike cylindric, very obtuse: involucre about 1-leaved, rigid, equalling the simple umbel.

Vaginaria.

21—2. Fissidens. 56. 4.

hyoides, stem short: leaves facing 2 ways, lanceolate: pedicels terminal: capsules erect. In damp shades.

taxifolius, stem short: leaves facing 2 ways, lanceolate, slenderly denticulate: capsules erect. In damp shades.

adianthoides, stem elongated, ramose: leaves lanceolate, sheathed at the base: pedicels lateral: capsules sub-erect. In wet woods and meadows.

Polytrichum.

6—1. Floerkea. 15. 22.

uliginosa, M. (4) (false mermaid. O. w-y. Ap. 2f.) leaves alternate; those

(1) polystachya, Ph. E. Mx. (2) Scirpus, L. Mx. &c. (3) puberulum, Vahl. (4) Nectris pinnata, Ph.

under water ternate, those above water quinate-pinnate. Grows in great quantities along the southeast part of Lake Erie—often 1 f. *S.* Cleome.

21—2. Fontinalis. 56. 4.

capillacea, (water moss.) leaves acute, linear-awl-form, spread, longer than the capsule: sheaths and peduncles long filiform.

antepyretica, stem branched, 3-sided. leaves facing 3 ways, lance-ovate, carinate, acute, pericheth obtuse. In water. Fissidens.

11—2. Fothergilla. 50. 99.

Southern.

alnifolia, W. (1) (witch alder. w. Ap. ♄.) leaves wedge-obovate, crenate-toothed above. Var. *major*, has ovate-oblong leaves, sub-cordate. Var. *acuta*, has ovate-acute leaves. Rosa.

11—13. Fragaria. 35. 92.

virginiana, (2) (wild strawberry. O. w. M. 2f.) calyx of the fruit spreading: hairs on the petioles erect, on the peduncles close-pressed: leaves somewhat glabrous above.

canadensis, Mx. (mountain strawberry. w. M. 2f.) large: leafets broad-oval, lateral ones manifestly petioled: pedicels long, recurve-pendulous: receptacle of the seeds globose, honeycomb-scrobiculate, villose. Probably a variety of virginiana. *S.*

Exotic.

vesca, (english strawberry. w. M. 2f.) calyx of the fruit reflexed: hairs on the petioles spreading, on the peduncle close-pressed.

elatior, (hautboy strawberry. w. 2f.) calyx of the fruit reflexed: hairs on the peduncle and petiole spreading.

grandiflora, (pine-apple strawberry. w. 2f.) calyx of the fruit erect: hairs on the peduncle and petiole erect: leaves coriaceous, somewhat glabrous above. Calycanthus.

4—1. Frasera. 47. 46.

caroliniensis, Wr. (3) (pyramid flower, columbo root. r. &. y. Ju. ♂.) leaves whorled or opposite: flowers in clusters. 3—6 f. *S.* Lycium.

20—2. Fraxinus. 44. 37.

sambucifolia, Mx. (black ash. O. M. ♄.) leafets sessile, lance-ovate, serrate, rugose-shining, round-oblique at the base; axils of the veins villose beneath flowers naked, not calycled. *S.*

acuminata, Lk. (4) (white ash. O. w-g. M. ♄.) leafets petioled, oblong, shining, acuminate, very entire, or slightly toothed, glaucous beneath: flowers calycled. *S.*

pubescens, Wr. (5) (red ash. E. M. ♄.) leafets petioled, oval-ovate, serrate; petioles and branchlets downy beneath: flowers calycled. Var. *longifolia*, leafets narrow, lance-ovate, sub-serrate. Var. *latifolia*, leafets ovate, broad, serrate; serratures obsolete towards the middle. Var. *sub-pubescens*, leafets oval-oblong, acuminate, sharply serrate, sub-pubescent below, common petiole very glabrous.

juglandifolia, W. (6) (walnut-leaf ash, swamp ash. E. M. ♄.) leafets petioled, ovate, opake, serrate, glaucous beneath: axils of the veins pubescent: branchlets glabrous: flowers calycled. *S.*

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(1) gardeni, Mx (2) glabra, Du Hamel. (3) walteri, Mx. (4) concolor, Mx. americana, W. (5) tomentosa, Mx. (6) caroliniana, Wm.

epiptera, Vahl. (1) (E. M. ♄.) leafets lance-oval, sub-serrate: samaras wedge-form, obtuse-emarginate at the apex, terete below. *S.*

platycarpa, Mx. (E. Ap. ♄.) leafets petioled, serrate, and, like the fruit, lance-elliptic. *S.*

caroliniana, W. (Ap. ♄.) leafets petioled, lanceolate, serrulate, shining, glabrous: branchlets glabrous: flowers calycled. *S.*

Southern.

triptera, N. (E. ♄.) leafets obovate, entire, subsessile, tomentose beneath, oblique at the base: fruit broad, obovate, generally 3-winged, tapering at the base.

quadrangulata W. (W. M. ♄.) leafets sub-sessile, lance-oval, serrate, pubescent beneath: samara obtuse at each end. Borya.

6—1. FRITILLARIA. 10. 14.

Southern.

lanceolata, Ph. (2) (W. p. Ju. 2♃.) stem leafy, 1—2-flowered: leaves lance-linear, obtusish; lower ones whorled: petals lanceolate.

alba, N. (W. w. Ap. 2♃.) glaucous: leaves remotish, alternate, sessile, oblong-linear, flattish, oblique, obtuse, sub-striate beneath: flowers 1—3, axillary and terminal. 1 f.

Exotic.

imperialis. (crown imperial. r. & y. M. 2♃.) flowers under a leafy crown, nodding: leaves lance-linear, entire. From Persia.

meleagris, (fritillary, guinea-hen flower. p. & y. M. 2♃.) leaves alternate, linear, channelled: stem 1-flowered: nectary linear. Flower checkered. Scilla.

3—1. FUCHSIA. 17. 88.

Exotic.

magellanica, Lk. (3) (ear-drop r.) peduncles axillary, 1-flowered: leaves opposite or in threes, very entire. Flowers pendulous. Clarckia.

21—4. FUCUS. 57. 2.

siliquosus, stem compressed: branches 2-ranked, alternate: vesicles articulated, beaked: receptacles beaked, lance-linear, compressed, petioled. In the sea, bearing fruit in the winter.

nodosus, stem compressed: vesicles imbedded, some of them inflated: receptacles sub-opposite, pear-form, peduncled. In the sea.

vesiculosus, frond flat, ribbed linear, dichotomous, very entire: vesicles spherical, in pairs, imbedded in the frond: receptacles terminal, thick-oval. In the sea, large. Var. *spiralis* frond slender, without vesicles, spirally twisted. At the mouths of rivers.

torens, stem very short, dilated into a cup, sending out a fusiform, dichotomous receptacle. In the ocean. Chordaria.

3—1. FUIRENA. 3. 9.

squarrosa. Mx. (umbrella grass. Ju. 2♃.) spikes clustered (5—6) ovate: culm smooth: leaves ciliate: sheaths hairy: valves of the corol cordate-ovate. Var. *pumila*, culm pubescent above: leaves smooth: throat of the sheaths hairy: spikes 1—3, terminal. 18 i. *S.* Var. *pumila*, 3—6 i.

Southern.

scirpoidea, Mx. (E. 2♃.) stem leafless: head solitary, ovate, terminal: valves of the corol oval, unarmed. 12—18 i.

(1) discolor, Mx. (2) Lilium camschatcense, W. (3) coccinea, A.

hispida, E. (E. Au.) leaves long, with the sheaths very hispid: stem hispid above: heads many (5—8) clustered: valves of the corol ovate, mucronate. 1—2 f. Cenchrus.

21—6. FULIGO. 58. 1.

rufa, (soot fungus.) cushioned, reddish-yellow: bark sub-rugose, fragile, subcompact. On trunks in summer and autumn. Sometimes globose in the young state, and sometimes hemispheric; from half an inch to an inch in diameter.

flava, opening and roundish, yellow, with a cellular fibrous bark. On deciduous leaves, trunks, mosses, &c. in autumn.

vaporaria, at first covered, veiny, creeping; when mature broad-cespitose, thick, cellular-fibrous, cinnamon-yellow. Among pulverized bark, at first appearing like vapour, then fibrous and coriaceous. Physarum.

16—6. FUMARIA. 24. 62.

Exotic.

officinalis, (fumitory. r. J. ☼.) stem branching, spread: leaves more than decompound; leafets wedge-lanceolate, gashed. Naturalized. 6—10 i. Petalostemon.

21—2. FUNARIA. 56. 4.

hygrometica, (hygrometer moss.) leaves ovate, acute, concave, entire, inflected: capsules swelling, drooping, pear-form: pedicels very long, twisting spirally when dry.

flavicans, leaves setaceous, long-acuminate: peduncle capillary, pale.

muhlenbergii, leaves obovate, awned, concave, serrulate, spread: capsule obovate, oblique. Pterigynandrum.

G.

16—10. GALACTIA. 32. 93.

glabella, Mx. (1) (milk-way plant. E. r. &. w. J. 2f.) prostrate, somewhat twining and glabrous: leaves ternate; leafets oval-oblong, obtuse, emarginate at both ends: raceme axil ary, as long as the leaves: legumes villose. *S.*

mollis, Mx. (2) (r. & w. Ju. 2f.) twining, having soft whitish pubescence: leaves ternate, ovate-oblong, obtuse, smoothish, glaucous beneath racemes axillary, simple, elongated, few-flowered: legumes villose. *S.*

Southern.

pilosa, N. (E. p. Ju. 2f.) densely pilose: leaves ternate; leafets oblong-ovate obtuse, pale beneath: racemes axillary, much longer than the leaves: flowers scattered on short pedicels.

elliotti, N. (E. w. J. 2f.) leaves pinnate; leafets oval, emarginate, glabrous above, pubescent beneath: racemes long, few-flowered. Vexillaria.

6—1. GALANTHUS. 6. 17.

Exotic.

nivalis, (snow-drop. w. Ap. 2f.) leaves linear, keeled, acute, radical: scape 1-flowered. Narcissus.

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(1) Dolichos regularis, W. Ervum volubile, Wr. (2) Hedysarum volubile, W.

17—3. GALARDIA. 49. 55.

Southern.

bicolor, Lk.! (1) (O. p. J. 2ℓ.) leaves alternate, sessile, lance-linear, acute, pubescent, sparingly serrate, ciliate; cilia hooked: flowers solitary, terminal: scales of the calyx lanceolate, acute, pubescent; outer ones reflexed; inner ones erect: chaff of the egret very entire, awned. Var. *aristata*, Ph. very hirsute, scabrous: stem branching: leaves lance-linear, sessile: chaffs of the egret (5—7) ovate-lanceolate, very long-awned. 2 f.

pinnatifida, T. & J. (W. y. p.) leaves pinnatifid; divisions lance-linear, somewhat entire. 8 i. Silphium.

Galardia, ACTINELLA, LEPTOPODA.

5—1. GALAX. 28. 40.

Southern.

rotundifolia, Mx. (2) (A. w. J. 2ℓ.) very glabrous: leaves round-reniform, toothed: spike very long. Zizyphus.

16—10. GALEGA. (3) 32. 93.

virginiana, (goat's rue. O. r. 2ℓ.) erect, having whitish down; leafets (17 to 21) lance-oblong, acuminate: raceme terminal, short, sub-sessile: legumes falcate, villose: calyx woolly. 1 f. *S.*

Southern.

chrysophylla, Ph. (4) (E. M.) prostrate, pubsecent: leaves pinnate, in fives, sub-sessile; leafets cuneate, obovate, very obtuse, glabrous above, silky beneath: peduncles opposite the leaves, long, about 3-flowered: legumes nearly straight.

hispidula, Mx. (5) (E. r. M. 2ℓ.) stem erect, slender, pubescent, dichotomous: leaves pinnate; leafets (11—15) oval, sub-retuse, mucronate, hairy beneath: racemes as long as the leaves, few-flowered: legumes mucronate, slightly hispid. 2 f.

paucifolia, N. (6) (E. r. M. 2ℓ.) stem decumbent, very villous: leaves distant, pinnate; leafets oval, wedge-form at the base, villous beneath: peduncles much longer than the leaves, few-flowered. Medicago.

13—1. GALEOPSIS. 42. 39.

tetrahit, (flowering nettle. O. r. & w. Ju. ☼.) the spaces between the joints of the stem thicken upwards: leaves ovate, hispid, serrate: calyx prickly, shorter than the corol: stem rough-haired. 1—2 f.

ladanum, (E. r. Ju. ☼.) stem hairy: internodes not swollen: leaves lanceolate, sub-serrate, hairy: upper lip of the corol sub-crenate. 1 f. Stachys.

4—1. GALIUM. 47. 57.

1. *Fruit glabrous.*

trifidum, W. (7) (bed-straw. E. w. Ju. 2ℓ.) stem procumbent, scabrous backwards: cauline leaves in fives: branch leaves in fours, linear, obtuse, sca-

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(1) lanceolata, Mx. (2) aphylla, W. Erythrorhyza, Mx. (3) Tephrosia, Ph. &c. (4) prostrata, N. (5) T. gracilis, N. (6) villosa, Mx. spicata, Wr. (7) claytoni, Mx.

brous at the margin and on the nerves: fascicles terminal, few-flowered: pedicels short: corols mostly 3-cleft. *S.*

verum, (E. y. Ju. ♃.) leaves whorled, about in eights linear, grooved, entire, scabrous: flowers in dense panicles. Var. *latifolium*, leaves wedge-obovate.

tinctorium, (Dyer's cleavers. O. w. Ju. ♃.) stem diffuse, smoothish: cauline leaves in sixes: branch leaves in fours, linear-acutish: peduncles terminal, elongated, mostly 3 flowered. 1 f. *S.*

obtusum, Bw. (E. w Ju. ♃.) stem smooth, procumbent: leaves in fours, oblanceolate, obtuse, rough on the margin and midrib.

asprellum, Mx. (rough bed-straw. O. w. Ju. ♃.) stem diffuse, very branching, prickly backwards. leaves in fives and sixes, lance-olate, acuminate; margins and nerves prickly: pedicels short. 18—24 i. *S.*

2. *Fruit hirsute.*

brachiatum, Ph. (bed-straw. E. w. Ju. ♃.) stem limber, long, brachiate-ramose, hispid: branches short: leaves in sixes, lance-oblong, acuminate, glabrous: margin and keel ciliate: branches whorled, the longest dichotomous: pedicels 2-flowered: fruit with hooks. *S.*

parine, (E. w. J. ♂.) stem limber, scabrous backwards: leaves in about eights, linear, linear-oblanceolate, mucronate, hispid above, margin and keel prickly: fruit hook-bristled. 3—4 f.

micranthum, Ph. (O. w. Ju. ♃.) stem very branching, prickly backwards: leaves short, lanceolate, mucronate, glabrous; margin and keel prickly: pedicels about 2-flowered.

triflorum, Mx. (1) (O. w. Ju. ♃.) stem procumbent, smoothish: leaves in fives or sixes, lance-obovate, mucronate, glabrous, scarcely ciliate at the margin: branchlets 3-flowered at the end; flowers pedicelled: fruit small. *S.*

pilosum, A. (E p. J. ♃.) stem nearly simple, long, ascending, remotely geniculate, hispid: leaves in fours, oval, short-mucronate, very hirsute both sides, nerveless: branchlets nearly simple, about 3-flowered at the end: fruit pilose. 1 f. *S.*

circæzans, Mx. (2) (wild liquorice. O. w-y. J. ♃.) stem erect, smooth: leaves in fours, oval, obtuse, glabrous; margins and nerves a little ciliate: peduncles few-flowered: flowers remote, sub-sessile: fruit with hooked bristles. Leaves taste much like liquorice. 6—12 i. *S.*

lanceolatum, T. (E. p. Ju ♃.) stem erect, very smooth: leaves in fours, lanceolate, generally acute, smooth, 3 nerved, sub-ciliate at the margin: peduncles divaricate: fruit sessile, nodding, hook-bristled. 1 f.

bermudianum, W. (3) (O. p. Ju. ♃.) stem very branching, scarcely pubescent: leaves in fours, ovate, obtuse, glabrous, with pellucid dots; margins and nerves pubescent: floriferous branchlets elongated: fruit with hooked bristles. *S.*

boreale, (4) (O. w. Ju. ♃.) stem stiffly erect, smoothish, branching: branches short, erect: leaves in fours, linear-lanceolate, obtuse, 3-nerved, with involute scabrous margins: flowers panicled, terminal: fruit minutely hook-bristled. 12—24 i.

Southern.

latifolium, Mx. (A. p. Ju.) stem erect, smooth: leaves in fours, oval, acute, membranaceous, somewhat hispid on the margin: peduncles divaricate, loosely many-flowered: fruit smooth.

uniflorum, Mx. (E. p. J ♃.) stem assurgent, smooth: leaves generally in fours, linear, acute, revolute: peduncles generally solitary, 1-flowered: fruit smooth.

hispidulum, Mx (E. w. M. ♃.) stem procumbent, pubescent, much branched: leaves in fours, lanceolate, dotted, scabrous: fruit scabrous.

Spermacoce.

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(1) cuspidatum, M. (2) brachiatum, M. boreale, Wr. (3) purpureum, Wr. puncticulosum, Mx. (4) strictum, 4th Ed.

10—1. Gaultheria. 18. 51.

procumbens, (spicy wintergreen. O. w. J. ♃. or ♄.) stem procumbent: branches erect: leaves obovate, acute at the base: flowers few, nodding. Berries red, consisting in part of the permanent calyx; a little mealy, pleasant tasted. *S.*

hispidula, M. (1) (creeping wintergreen. O. w. M. ♄.) stem creeping, hispid: leaves oval, acute: flowers solitary, axillary, sub-sessile, having but 8 stamens, short-bell-form.

shallon, Ph. (W. w. J. ♄.) erect, fruticose: leaves ovate, sub-cordate, serrulate: raceme 1-sided, bracted: pedicels 2-bracted in the middle. *S.*

Vaccinium.

8—1. Gaura. 17. 88.

biennis, (virginian loosestrife. E. r. & y. Au. ♂.) leaves lanceolate, toothed: spike crowded: fruit roundish-4-cornered, pubescent. 4—6 f. *S.*

Southern.

angustifolia, Mx. (2) (E. w. Ju. ♃.) leaves clustered, linear, repand, undulate: fruit oblong, 4-angled, acute at each end.

coccinea, N. (W. r. ☼. ♃.) silky-pubescent: leaves lance-linear, sub-denticulate: spike crowded: petals as long as the calyx: stigma sub-entire. Var *integerrima*, stems numerous, hoary sub-villose, simple: leaves lance-oblong, very entire, acutish, narrow at the base: racemes lax, few-flowered: petals ovate, obtuse, with very narrow claws.

mollis, N. (W.) leaves lanceolate, entire, clothed with soft hairs.

linifolia, N (W. w.) stem erect, sparingly branched, smooth: leaves smooth, sessile, lance-linear, entire; midrib translucent: spike terminal, crowded, becoming much extended after flowering: fruit triquetrous, shorter than the linear bracts. 3—4 f.

villosa, T. & J. (W. r.) herbaceous: stem panicled above, naked, very glabrous: leaves silky-villose lanceolate, acute, remotely toothed and entire: petals obovate, obtuse: stamens declined: flowers octandrous: capsules linear-oblong. 3 f.

parvifolia, T. & J. (W. r.) stem glabrous, panicled above: leaves linear, hirsute, entire: flowers loosely spiked: petals roundish, with short claws: capsules ovate-oblong, narrowing towards each end. Epilobium.

21—6. Geastrum. 58. 1.

rufescens, rays many-cleft, reddish: fruit sessile, glabrous, pale. In pine woods.

hygrometricum, rays many-cleft, inflexed, liver-brown: fruit reticulate, sessile, nearly of an uniform colour. On gravelly soil, in spring and autumn.

Bovista.

5—2. Gelseminum. 40. 45.

Southern.

sempervirens, W. (3) (E. y. March. ♃.) stem twining, smooth, glabrous: leaves opposite, perennial, lanceolate, entire, dark-green above, paler beneath: petioles short. Var. *inodorum*, has inodorous flowers

Hydrolea.

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(1) serpyllifolia, Ph. Vaccinium hispidulum, L. Oxycoccus hispidulus, P. Arbutus thymifolia, A. filiformis, Lk. (2) biennis, Wr. (3) Bignonia, W.

16—10. Genista. 32. 93.

Exotic.

tinctoria, (dyer's broom. y. Au. 2f.) leaves lanceolate, glabrous: branches terete, striate, erect, unarmed: legumes glabrous. 1 f.

5—2. Gentiana. 47. 46.

saponaria, (1) (soap gentian. O. b. & w. S. 2f.) stem terete, glabrous: leaves lance-ovate, 3-nerved: flowers sessile, fascicled, terminal and axillary: corol 5-cleft, bell-ventricose, almost closed at the top: inner folds toothed. 12—18 i. *S.*

ochroleuca, Frl. (2) (O. y. & b. S. 2f.) stem somewhat angled, glabrous: leaves lance-ovate: flowers sessile, fascicled, terminal: corol 5—10-cleft, bell-ventricose; divisions acute; inner folds simple, acute. 1 f. *S.*

rubricaulis, Sz. & Keating. (W.) stem terete, glabrous, red: leaves lance-oblong, 3-nerved, obtuse: flowers terminal, fascicled, sessile: corol 5-cleft, bell-form, not ventricose; divisions acute, connivent; inner folds 1-toothed. 1 f.

pneumonanthis, (calathian violet. E. b. Au. 2f.) stem terete: leaves lance-linear, obtusish: flowers terminal, fascicled; lateral ones solitary, peduncled: corol 5-cleft, bell-form; divisions roundish; inner folds with one acute tooth. 1 f. *S.*

angustifolia, Mx. (3) (E. b. O. 2f.) stem simple, slender, 1-flowered: leaves linear and wedge-form, spreading: corol funnel-form, with the alternate divisions lacerate. 1 f. *S.*

linearis, Frl. (4) (A. b. Au. 2f.) stem somewhat scabrous: leaves lance-linear, undulate, ciliate: flowers sessile, in terminal, crowded fascicles: calyx ciliate: corol bell-form, 5-cleft; divisions obtuse, with the inner folds denticulate. *S.*

quinqueflora, Frl. (5) (O. b. Au. ♂.) stem 4-cornered, branching: leaves half-clasping, oval, acute, 3-nerved: flowers 5-cleft, bell-tubular, with a glabrous throat, terminal and lateral, in threes or fives, sub-pedicelled; divisions lanceolate, acuminate: calyx short. 1 f. *S.*

crinita, W. (6) (fringed gentian. O. b. S. 2f.) stem terete: branches long, 1-flowered: leaves lanceolate, acute: corol 4-cleft; divisions obovate, gash-ciliate. 18 i. *S.*

acuta, Mx. (A. g-y.) stem 4-angled: leaves somewhat clasping, oblong, very acute: flowers fascicled, terminal and lateral; throat of the corol ciliate. *S.*

lutea, (yellow gentian. y.) leaves broad-ovate, nerved: corols about 5-cleft, wheel-form, whorled.

Southern.

gatesbaei, Wr. (E. O.) rough: leaves narrow-lanceolate; divisions of the calyx lance-linear, twice as long as the tube: corol with the border erect; inner segments short, 2-cleft, fimbriate. Cuscuta.

21—6. Geoglossum. 58. 1.

hirsutum, sub-fascicled, hirsute, black.

viride, fascicled, green: clavate pileus obtuse: stipe scaly.

Spathularia.

15—10. Geranium. 14. 73.

maculatum, (crow-foot geranium. O. r. & b. J. 2f.) erect: pubescence reversed: stem dichotomous: leaves opposite, 3 or 5-parted, gashed; upper ones sessile: peduncles 2-flowered: petals obovate. 1—2 f. *S.*

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(1) fimbriata, Vahl. (2) saponaria, Wr. villosa, W. (3) purpurea, Wr. (4) puberula, Mx. (5) quinquefolia, L. amarelloides, Mx. (6) fibriata, Bot. rep.

carolinianum, (E. w. r. Ju. ♂.) diffuse, pubescent: leaves opposite, 5-lobed: lobes 3-cleft, gashed: peduncles 2-flowered, sub-fascicled: petals emarginate, equalling in length the awned calyx: arils villose. 12—18 i. *S.*

pusillum, (E. b. M. ☼) peduncles 2-flowered: flowers pentandrous: petals emarginate, of the length of the awnless calyx: leaves about 7-lobed, 3-cleft. arils pubescent.

dissectum, W. (E. r. J. ☼.) spread, hairy: leaves opposite, 5-parted: lobes 3-cleft, gashed, linear: peduncles 2-flowered, long: petals emarginate, the length of the awned calyx: aril with glandular hairs. 1 f.

robertianum, (herb robert. O. r. J. ♂.) spread, hirsute: leaves opposite, ternate and quinate, 3-cleft, pinnatifid: peduncles 2-flowered: petals entire, twice as long as the awned calyx: aril net-veined. 10—15 i. *S.*

columbinum, (b. M. 2f.) peduncles 2-flowered, longer than the leaves: leaves 5-parted: lobes many-cleft, linear: petals emarginate, of the length of the awned calyx: arils glabrous.

Exotic.

sanguineum, (bloody geranium. 2f.) peduncle 1-flowered: leaves 5-parted, 3-cleft, orbicular: capsule bristly at the top.

Southern.

caespitosum, J. (W. r.) somewhat erect, sparingly branched above: radical leaves reniform, deeply 5—7-cleft. Acacia.

Geranium, PELARGONIUM, ERODIUM.

13—2. GERARDIA. 40. 40.

1. *Flowers yellow.*

flava, (false foxglove. O. y. Ju. 2f.) pubescent: stem nearly simple: leaves sub-sessile, lanceolate, entire or toothed; lower ones sub-pinnatifid, gashed: flowers axillary, opposite, sub-sessile. 2—3 f. *S.*

glauca, Eddy. (1) (oak-leaf foxglove. O. y. Ju. 2f.) glabrous: stem glaucous, panicle-like: leaves petioled, sinuate-pinnatifid, with acute-lanceolate divisions: upper leaves lanceolate, entire. 3—5 f. *S.*

pedicularia, (louse-wort foxglove. O. y. S. ♂.) pubescent, brachiate-panicled: leaves oblong, doubly gash-serrate and pinnatifid: flowers axillary, opposite, pedicelled; divisions of the calyx leafy, gash-toothed. Var. *pectinata*, stem and branches densely pilose: leaves ovate, pectinately sub-bipinnatifid, soft pubescent: calyx hirsute. 2 f. *S.*

2. *Flowers purple.*

purpurea, (E. p. Au. ☼.) stem with opposite branches: leaves linear, slender: flowers axillary, opposite, sub-sessile: segments of the calyx subulate. 12—18 i. *S.*

maritima, R. (2) (L. p. Ju. ☼.) leaves linear, fleshy, short, obtusish: flowers peduncled: upper segments of the corol ciliate: calyx truncate. 6—12 i.

auriculata, Mx. (3) (E. p. Au. ☼.) nearly simple, rough: leaves lance-ovate, 2-eared at the base, entire: flowers axillary, opposite: leaves and flowers closely sessile. 8 i. *S.*

tenuifolia, W. (4) (O. p. Au. ♂. ☼?) very branching: leaves linear, acute, scabrous: peduncles axillary, longer than the flowers: teeth of the calyx acute. 6—12 i. *S.*

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(1) quercifolia, Ph. Rhinanthus virginicus, G. heterophylla, M. (2) crinita, Eddy. crassifolia, Var. of purpurea, Ph. (3) Erinus africanus, M. (4) erecta, Vahl.

setacea, Wr. (1) (p. S. ☼.) stem very branching: leaves setaceous, glabrous: flowers scattered, terminal and axillary: peduncles much longer than the leaves. 2 f. *S.*

Southern.

aphylla, N. (E. p. Ju. ☼.) stem naked, nearly simple, with small, deciduous, opposite, ovate scales: corol longer than the peduncle. 3 f.

plukenetii, E. (E. y. S.) stem very branching: leaves setaceous, glabrous: flowers axillary and terminal: peduncles shorter than the leaves: teeth of the calyx setaceous, very short. 2 f

fasciculata, E (L. p. S. ☼) stem rigid, erect, branching near the summit: leaves opposite and in threes, sometimes alternate, linear, clustered, very scabrous: peduncles much shorter than the leaves. 3—5 f.

filifolia, N. (E. p. S.) stem terete, branching: leaves filiform, somewhat clustered, glabrous, alternate; divisions of the calyx acutely toothed: peduncles longer than the leaves

linifolia, N. (2) (E. p. S. 2f.) stem terete, virgate: leaves linear, acute, smooth, appressed: calyx truncate, denticulate: corol pubescent without, villous within: peduncles a little shorter than the leaves. 2—3 f.

cuneifolia, Ph. (E.) branching: branches erect: leaves wedge form, lanceolate, unequally serrate; upper ones alternate: peduncles axillary, longer than the leaves: calyx 5-parted. Is this a Gerardia? E.

fruticosa, Ph. (W. p. J. ♄.) very branching: leaves lanceolate, serrate, attenuate at the base, sub-petioled: racemes terminal: flowers opposite, bracted. Rocky Mountains. Pedicularis.

GERARDIA. SEYMERIA.

11—13. GEUM. 35. 92.

strictum, W. (3) upright avens. O. y. J. 2f.) hirsute: leaves all interruptedly pinnate, the odd one largest: leafets ovate, toothed: stipules gashed: divisions of the calyx 5, alternately linear, short: flowers erect: petals roundish, longer than the calyx: awns naked, hooked. 2 f.

virginianum, (avens. O. w. Ju. 2f.) pubescent: radical and lower cauline leaves ternate, upper ones lanceolate: stipules ovate, sub-entire: flowers erect, petals shorter than the calyx: awns hooked, naked: at the apex twisted, hairy. Var. *trilobum*, has the radical leaves 3-lobed or ternate. 2 f. *S.*

album, W. (4) (w. Ju. 2f.) pubescent: radical leaves pinnate: cauline ones ternate, upper ones simple, 3-cleft: lower stipules gashed: flowers erect: petals of the length of the calyx: awns hooked, naked, hairy at the end. 2 f. *S.*

rivale, (purple avens. O. p. M 2f.) pubescent: stem simple: radical leaves interruptedly pinnate: cauline ones 3-cleft: flowers nodding: petals of the length of the calyx: awns plumose, nakedish above, a little hooked. Excellent tonic. Damp.

peckii. Ph. (A. y. Ju 2f) stem few-flowered: radical leaves reniform, rounded, sub-truncate at the base, gash toothed: petioles very long, sometimes appendaged: petals roundish, longer than the calyx. 4—8 i.

geniculatum, Mx. (E. 2f.) many-flowered, sub-panicled: cauline leaves subsessile, 3 parted: stipules entire: petals wedge-obcordate: awns all over hairy, geniculate in the middle.

radiatum, Mx. (A. y.) very hirsute: radical leaves pinnate; terminal one

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(1) erecta, Mx? (2) erecta, W.? (3) canadense, Mr. aleppicum, Jn. (4) canadense, Jn. caroliniauum, Wr.

large, reniform, with radiating nerves, dentate; stem leaves clasping, gash-lacerate: awns glabrous, simple at the summit. *S.*

ciliatum, Ph. (W. y-p. Ju. 2f.) pubescent: stem simple: leaves a little glabrous, ciliate at the margin; lower ones pinnate, cauline ones pinnatifid, upper ones palmate: divisions linear, gashed: flowers corymbed.

anemonoides, W. (W. Ju. 2f.) glabrous: stem 1-flowered: leaves pinnate; leafets wedge-form, toothed at the apex: awn straight, villose.

Southern.

trifiorum, Ph. (W. w. 2f.) pilose: stem simple, somewhat 3-flowered. radical leaves interruptedly pinnate; leafets wedge-form, gash-toothed: petals oblong, as long as the calyx: awns very long, villose. Bootia.

11—5. GILLENIA. 36. 92.

trifoliata, Mn. (1) (Indian physic, Bowman's root. O. w. J. 2f.) leaves ternate, lanceolate, serrate, nearly equal: stipules linear, entire: flowers terminal, in loose panicles: calyx bell-tubular. Styles 5. 2 f. *S.*

stipulacea, (2) (W. w. J. 2f.) leaves ternate, lanceolate, gash-serrate, nearly equal: stipules leafy, ovate, gash-toothed: flowers in a lax panicle: calyx bell-form. Styles 5. Var. *incisa*, has ternate leaves, with leafets gash-toothed. 2—3 f. *S.* Mespilus.

12—1. GLAUCIUM. 27. 62.

Southern.

luteum, S. (3) (L. y. Ju. ☼.) stem glabrous: cauline leaves clasping, repand: peduncles 1-flowered: silique tuberculate, and a little scabrous. Delphinium.

5—1. GLAUX. 17. 91.

maritima, (sea milk-wort. L. r. Ju. 2f.) leaves oblong, smooth: flowers axillary, sessile. 4—5 i. Gentiana.

13—1. GLECHOMA. 42. 39.

hederacea, (ground-ivy, gill-overground. O. b. & r. M. 2f.) leaves reniform, crenate: stem rooting. Var. cordata, leaves cordate. *S.* Pycnanthemum.

20—6. GLEDITSCHIA. 33. 93.

triacantha, (honey locust. w. J. ♄.) thorn strong, cross-branched: leaves oval, and oblong: legumes very long, compressed. A large tree. One side of the long flat legume contains a sweet pulp. Cultivated. Var. *inermis*, branches unarmed. *S.*

Southern.

brachycarpa, Ph. (O. Ju. ♄.) spines thick, short, subternate: leafets oblong, obtuse: leguines short-oblong.

monosperma, W. (swamp locust. O. Ju. ♄.) branches somewhat spiny: leafets ovate-oblong, acute: legumes oval, mucronate, somewhat 1-seeded. Populus.

3—2. GLYCERIA. 4. 10.

fluitans, (4) (E. Ju. 2f.) panicle one-sided, slightly branched: spikelets linear-terete, appressed, 8—12-flowered; florets very obtuse, 7-nerved: leaves long, flat. 2—3 f. *S.*

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(1) Spirea, L. (2) Spirea stipulata, M. (3) Chelidonium glaucium, W. (4) Festuca, L. Poa, S. Devauxia, Pb.

brevifolia, M. (1) (E. J. 2[.) panicle simple, elongated, appressed: spikelets linear-terete, 4—6-flowered: florets attenuated, acute, indistinctly nerved: leaves short, erect. 18 i. Uniola.

Glycine, APIOS, STROPHOSTYLES, AMPHICARPA.

16—10. GLYCINE. 32. 93.

[All the species of this genus, growing in the Northern States, have been distributed under Strophrostyles, Apios, and Amphicarpa. Elliott retains the following Southern species, which might perhaps be referred to Amphicarpa. Let Glycine be referred to with the pen, at p. 58, between Trigonella and Thyrsanthus.] Generic character by Elliott. Calyx 4-cleft; upper segment 2-toothed: wings 2-toothed at the base: germ naked at the base: legume compressed, 2-seeded, sessile.

Southern.

simplicifolia, Wr. (2) (E. y. Ju.) leaves simple, orbicular, rugose: clusters terminal and axillary. 2—4 i.

tomentosa, W. (E. y. J.) twining: leaves ternate, rhomboid, rugose: clusters axillary, few-flowered, shorter than the petiole.

erecta, Wr. (E. y. Ju. 2[.) stem erect: leaves ternate, oval, acutish: racemes axillary and terminal, longer than the petiole. 2 f.

mollissima, E. (E. y.) stem erect: leaves ternate, oval, soft-tomentose: racemes long, many-flowered, terminal.

reflexa, N. (E. y. S. 2[.) twining: leaves ternate, round-rhomboid, pubescent: racemes axillary, erect, much longer than the leaves: flower buds and legumes reflected. Thyrsanthus.

16—10. GNYCYRRHIZA. 32. 93.

Exotic.

officinalis, (liquorice. 2[.) leaves pinnate, the terminal one petioled. Root tuberous-cylindric, sweet.

Southern.

lepidota, N. (W. w. Ju. 2[.) leafets oblong, acute, silky-villose: legumes racemed, oblong, hispid. 3—5 f. Oxytropis.

17—2. GNAPHALIUM. 49. 55.

margaritaceum, W. (large-flowered life-everlasting. O. y. & w. Ju. 2[.) leaves linear-lanceolate, gradually narrowing, acute: stem branching above: corymb fastigiate: flowers pedicelled. Flowers with white pearly rays and yellow disks. 1—2 f. *S.*

polycephalum, Mx. (3) (sweet-scented life-everlasting. O. y-w. Ju. ☼.) leaves lance-linear, acute, glabrous above, downy beneath: stem panicled, downy: corymbs terminal. 1—2 f. *S.*

decurrens, Ives, (4) (neglected life-everlasting. O. y-w. Ju. ☼) leaves lanceolate, broad at the base, acute, decurrent, somewhat scabrous above, tomentose beneath: stem leafy, branched, spreading. 1—3. *f.*

plantagineum, W. (early life-everlasting. O. w. Ap. 2[.) shoots procumbent: stem simple: radical leaves spatulate, ovate, and obovate, nerved: corymb close-pressed: flowers dioecious: inner scales of the calyx elongated, acutish, coloured. 6—10 i. *S.*

purpureum, W. (E. p. Ju. 2[.) leaves linear-spatulate, downy beneath: stem erect, simple: flowers sessile, glomerate, terminal and axillary. Calyx purple. 6—12 i. *S.*

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(1) acutiflora, T. Festuca, M. (2) reniformis, Ph. (3) obtusifolium, W. (4) luteo-album? M.

uliginosum, W. (mud-life-everlasting. O. w. Ju. ☼.) stem branched, spread, woolly: leaves lance-linear, narrowed at both ends, downy: flowers terminal, heaped: calyx brown. Damp. 4—6 i. *S.*

germanicum, W. (E. w. Ju. ☼.) stem erect, dichotomous: leaves lance-linear-acute, tomentose: flowers in a globular head, terminal and lateral. 6—8 i. *S.*

americanum, W. (1) (E. y-w. J. ☼.) herbaceous, erect, branching: leaves obovate-spatulate, pubescent beneath: flowers axillary and terminal, in glomerate spikes. 6—8 i. *S.*

sylvaticum, W. (Ju. 2ℓ.) stem erect, simple, downy: flowers in a leafy spike, axillary and terminal: leaves lance-linear, downy. 12 i.

alpinum, W. (A. 2ℓ.) stem not sarmentose, very simple: radical leaves lanceolate: flowers terminal, clustered, sessile: inner scale of the calyx elongated, acute, membranaceous. Labrador. 4 i. Pterocaulon.

5—1. GOMPHRENA. 54. 30.

Exotic.

globosa, (globe amaranth, bachelor's button. r. Au. ☼.) stem erect: leaves lance-ovate: heads solitary: peduncles 2-leaved. Cyrilla.

Gomphrena, ACHYRANTHES.

Gonolobium, GONOLOBUS.

18—5. GONOLOBUS. 30. 47.

obliquus, (false choak-dog. p. J. 2ℓ.) stem twining, hirsute: leaves heart-ovate, acute: corymbs axillary: segments of the corol ovate, acuminate. *S.*

hirsutus, Mx. (2) (p. Ju. 2ℓ.) sarments and petioles very hirsute: leaves gradually acuminate, pubescent on both sides: divisions of the corol oval-oblong, obtuse: follicles oblong, muricate.

Southern.

macrophyllus, Mx. (E. y. Ju.) leaves broad, cordate, with the sinus closed, abruptly acuminate: follicles muricate: lobes of the crown divided.

prostratus, (E. p.) stem prostrate, herbaceous: leaves reniform-cordate, acute, tomentose beneath.

viridiflorus, N. (W. g.) smooth, twining: leaves sub-reniform-cordate, auricled at the base, acuminate, somewhat long-peduncled: divisions of the corol oblong-linear, oblique, obtuse: follicles ribbed. Periploca.

18—1. GOODYERA, Br. (3) 7. 21.

pubescens, W. (rattle-snake leaf, scrophula-weed. O. y. w. Ju. 2ℓ.) leaves radical, ovate, petioled, veins coloured, reticulate: scape sheathed; scape and flowers pubescent: lip ovate-acuminate; petals ovate. 10—15 i. *S.*

repens, W. (A. w. Ju. 2ℓ.) radical leaves ovate, petioled, reticulate: scape sheathed: scape and flowers pubescent: flowers one-sided: lip and petals lanceolate. 8 i. Neottia.

15—12. GORDONIA. 37. 74.

Southern.

lasianthus, W. (E. Ju. w. ♄.) leaves lance-oblong, very glabrous, shining, coriaceous: flowers long-peduncled: capsules conical, acuminate.

pubescens, W. (E. w. M. ♄.) leaves wedge-lanceolate, serrulate, pubescent beneath, deciduous: capsules spherical. Corydalis.

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(1) spatulatum, Lk. pensylvanicum, M. (2) carolinensis, E. Cynanchum carolinense, W. (3) Neottia, W.

15—13. Gossypium. 37. 74.

Exotic.

herbaceum, (cotton. Au. ♂.) leaves 5-lobed, mucronate, one gland beneath: stem herbaceous, smooth. 5 f. Malope.

21—5. Graphis. 57. 2.

scripta, Ach. crust somewhat shining, white, black bordered: receptacles semi-immersed. On smooth bark, &c. Var. *macrocarpa*, crust effuse, becoming white: receptacles very long, strait, sub-parallel, simple and forked at the apex. Var. *pulverulenta*, receptacles flexuose: disk bluish-white. Var. *cerasi*, crust shining: receptacles straight and parallel.

serpentina, Ach. crust very white: receptacles elongated, crowded and waved. Smooth bark. Verrucaria.

2—1. Gratiola. 40. 40.

carolinensis, Ph. (1) (E. w. Ju. 2f.) stem smooth, somewhat branched, procumbent at the base, 4-sided above, terete below: leaves sessile, lance-oblong, obtusish, dentate, 3-nerved: pedancles pubescent, short: divisions of the calyx lance-linear, equal, entire: bracts broader, expanding: corol pubescent within: sterile filaments none: capsule globose. Le Conte. *S.*

virginica, (creeping hedge hyssop. O. w. & y. 2f.) stem more or less pubescent, branching at the base, assurgent, terete: leaves smooth, sessile, lanceolate, obtusish, dentate above, attenuate below: peduncles long, setaceous, pubescent: divisions of the calyx equal, lanceolate, obtuse: bracts broader: corol pubescent within: capsule ovate, acutish: sterile filaments none. Le Conte. 6—8 i. *S.*

aurea, M. (hedge hyssop. O. y. Ju. 2f.) smooth: stem 4-angled, repent at the base, branching: leaves sessile, lance-oblong, punctate, dentate or very entire, acute or obtusish: peduncles long, setaceous, pubescent: divisions of the calyx equal, linear: bracts linear, expanding: corol pubescent within: capsule ovate rather acute: sterile filaments 2, minute. Le Conte. 4—8 i. *S.*

anagallidea, Mx. (2) (w-b. 2f.) erect, very smooth: stem 4-sided: leaves oblong-oval; sparingly denticulate, shorter than the flowers: calyx without bracts, subulate, pubescent: corol smooth within; divisions generally obtuse. *S.*

Southern.

viscosa, Sz. (3) (E. w-p. Ap. 2f.) stem assurgent, viscid-pubescent, sub-terete: leaves smooth, sessile, lance-ovate, acutish, dentate, 3-nerved: peduncles long: divisions of the calyx equal, lance-linear: bracts broader, expanding, shorter than the calyx: corol pubescent within: sterile filaments two. capsule ovate, as long as the calyx. Le Conte.

quadridentata, Mx. (4) (E. w. Ju. ☼.) smoothish: stem terete, procumbent, sometimes viscous: leaves sessile, lanceolate, acute, sub-punctate, 4-toothed; two anterior teeth longest: divisions of the calyx unequal, linear: bracts small, only on the flowers that first appear: (later flowers without:) corol pubescent within: sterile filaments 2, small: capsule ovate, acute, shorter than the calyx. Le Conte.

pilosa, Mx. (5) (E. w. Ju. ☼) erect, branching, very hairy: stem 4-sided: leaves sessile, ovate, dentate: flowers sub-peduncled: divisions of the calyx unequal; two intermediate ones small, setaceous: corol smooth within: sterile filaments 2, very minute. Le Conte. 1—2 f. Lindernia.

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(1) virginiana, and acuminata, Wr. sphaerocarpa, and megalocarpa, E. officinalis, Mx. (2) tetragona, E? Lindernia pyxidaria, Ph. &c. (3) virginica, E. (4) ramosa, Wr. (5) peruviana, Wr.

21—2. Grimmia. 56. 4.

1. *Capsules sub-sessile, immersed.*

apicola, stem ramose: leaves lanceolate, obtusish: capsule ovate-urceolate, smooth, sub-sessile; calyptre torn at the base: lid obliquely beaked.
apocarpa, stem ramose: leaves ovate-acuminate, carinate, naked at the apex: capsule oblong, striate, sub-sessile. On moist trunks.
michauxi, Torrey, slenderly caulescent: leaves lanceolate, terminating in a capillary, white-pellucid and roughish point: pedicel terminal: capsule short-ovate, smooth. Michaux describes this species under the name *gracilis*; but this name having been applied to another species, Dr. Torrey substituted the name of its discoverer. Herb. Tor.
pilifera, stem erect, branching: leaves densely imbricate, lanceolate, erect-spreading and incurved: hairy pericheth large: capsule ovate, sub-sessile: lid conic, cuspidate.

2. *Capsules peduncled, exsert, short.*

ovata, stem very branching, fastigiate: leaves lanceolate, obtusish, erect-spreading, somewhat inflexed, hairy: capsules oblong-ovate: lid convex-conic. Weissia.

Grindelia, Donia.

21—5. Gyalecta. 57. 2.

bryophila, crust rugose-plicate, white, becoming somewhat cinereous: receptacles dark-blue, dilated at the bottom: the periphery elevated, inflexed, somewhat contracted, acutish: at length crowned at the base. Lecanora.

20—10. Gymnocladus. 33. 93.

canadensis, W. (W. w. J. ♄.) leaves bipinnate; leafets oval, acuminate, pubescent. *S.* Carica.

3—2. Gymnopogon. 4. 10.

racemosum, Pb. (1) (E. Au. 2♃.) (Described under Andropogon ambiguum.) Aulaxanthus.

21—2. Gymnostomum. 56. 4.

1. *Stem simple, erect.*

pyriforme, stem very short: leaves ovate, acute, flat; diœcious: capsules erect, pear-form; lid obtusely conic: calyptre split laterally.
turbinatum, stem short, simple: leaves lanceolate, apiculate, serrulate: capsules somewhat oblong-turbinate; lid convex, obtuse, acuminate.
splachnoideum, capsules contracted in the middle: leaves deeply serrate at the margin.

2. *Stems divided, procumbent or floating.*

prorepens, stipe creeping: stem erect, short, obtuse: leaves closely imbricate, lance-oval, acuminate: capsules globose; lids subulate. Schistidium.

17—4. Gymnostyles. 49. 55.

Southern.

stolonifera, P. (2) (E. M. 2♃.) herbaceous, procumbent, creeping, glabrous: leaves pinnatifid: flowers sessile at the root. Elephantopus.

(1) Andropogon ambiguum, Mx. Anthopogon lepturoides, N. (2) Hippia, P.

6—3. Gyromia. N. 11. 12.

virginica, (1) (Indian cucumber, O. y. g. M. 2f.) several leaves in a whorl near the middle of the stem, and 3 in a whorl at the top, lance-oval, acuminate: pedicels aggregated, terminal. Root white. 12—18 i. *S.* Trillium.

21—5. Gyrophora. 57. 2.

pustulata, Ach. frond deeply pitted beneath, smooth: receptacles distant: disk smooth. On rocks, &c.

papulosa, Ach. receptacles very thick together, minute, urceolate, and rarely gyrose. On rocks.

pensylvanica, Ach. frond tawny-olive; under-side rough-granulate: receptacles marginated. On rocks and mountains.

muhlenbergii, Ach. frond wrinkled and scaly beneath: receptacles in pits. On mountains.

vellea, Ach. frond large, coriaceous, sooty: receptacles generally towards the circumference of the frond. On rocks in mountains.

mammulata, Ach. frond smooth, pale-olive, at length dark-tawny; under-side very dark, scabrous and fibrous: receptacles convex, rugose-chinked, nearly destitute of any margin; disk sometimes concave and papillose. On rocks. Opegrapha.

H.

18—1. Habenaria. W. (2) 7. 21.

ciliaris, (orchis. O. y. Ju. 2f.) lip lance-oblong, pinnate-ciliate, twice as long as the petals: spur longer than the germ. 1—2 f. *S.*

blephariglottis, W. (E. w. J. 2f.) lip lanceolate, ciliate, of the length of the upper petal: spur longer than the germ. Resembles the last. 18 i. *S.*

cristata, Mx. (y. J. 2f.) lip oblong, pinnate-ciliate: petals round, 2 lateral ones toothed: spur shorter than the germ. *S.*

psycodes, W. (3) (O. y. J. 2f.) lip 3-parted, divisions capillary-many-cleft. petals obtuse: spur filiform-clavate, ascending, of the length of the germ.

integra, (y. Ju. 2f.) lip oblong, entire, longer than the inner petals: spur longer than the germ, acute at the point: stem leafy: bracts shorter than the flowers.

huronensis, N. (W. g-w. Au. 2f.) lip lanceolate, acuminate, entire, incurved: petals subulate, connivent: spur about the length of the lip, incurved: petals flat: stem leafy. 1—2 f.

dilatata, Ph. (giant orchis. O. w. or g. J. 2f.) spur shorter than the germ: lip entire, linear, with the base dilated, of the length of the spur: bracts of the length of the flower: stem leafy. In the mountain woods, the flowers are green; in the open meadows, white. 1—4 f. *S.*

fuscescens, W. (p-y. Ju. 2f.) lip ovate, toothed at the base: petals spreading: spur subulate, of the length of the germ: bracts longer than the flowers. *S.*

herbiola, Br. (E. y. J. 2f.) lip oblong, obtuse, toothed at the base: palate 1-toothed: spur filiform, shorter than the germ: bracts longer than the flowers. 1 f.

bracteata, W. (4) (vegetable satyr. O. g-w. M. 2f.) lip linear, emarginate, obsoletely 3-toothed: spur short, sub-inflated, somewhat 2-lobed: bracts twice as long as the flowers, leaf-like, spreading: roots palmate. 6—10 i. *S.*

orbiculata, Ph. (E. g-w. J. 2f.) lip linear, entire, obtusish: 3 upper petals converging; with the uppermost one deltoid, obtuse, and the 2 lateral ones spreading, oblique at the base: spur longer than the germ, clavate, flattish, curved: leaves 2, radical, orbicular, prostrate, glabrous, very shining. 12—18 i. *S.*

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(1) Medeola, L. &c. (2) Orchis, L. (3) lacera, Mx. (4) Satyrium, P.

macrophylla, T. (1) (A. g-y. J. 2f.) lip lanceolate, entire, acuminate: spur longer than the germ, terete, nearly straight: upper petals ovate, acute: scape with 2, broad-oval, sub-erect, leaves at the base. 1 f.

fimbriata, W. (O. p. Ju. 2f.) lips 3-parted: divisions wedge-form, ciliate-fringed: lateral petals ovate, toothed: spur filiform, clavate, longer than the germ. 2 f.

grandiflora, Bw. (2) (E. p. J. 2f.) lip dependent, twice as long as the petals, 3-parted; divisions wedge-form, fimbricate; middle one largest with connivent fimbriae: lateral petals fimbriate: spur ascending, clavate, longer than the germ: leaves oval-oblong. 2 f.

incisa, W. (w-p. Ju. 2f.) lip 3-parted; divisions wedge-form, gash-toothed, middle one emarginate: lateral petals obtuse, sub-dentate: spur subulate, ascending, of the length of the germ. 2—4 f. *S.*

fissa, W. (p. Ju. 2f.) lip 3-parted; divisions wedge-form, toothed, intermediate one 2-lobed: spur filiform, clavate, ascending, longer than the germ. Tall. *S.*

Southern.

quinqueseta, Mx. (3) (E. w. S.) lip 3-parted; lateral segments setaceous: inner petals 2-parted; lower segment setaceous, nearly twice as long as the outer petal: spur twice as long as the germ: leaves lance-oval: bracts acuminate. 2 f.

repens, N. (E. y-g. Au. 2f.) lip 3-parted; lateral segments setaceous: inner petals 2-parted; lower segment setaceous, scarcely longer than the outer petals: horn as long as the germ: leaves narrow-lanceolate: bracts acute. Goodyera.

Habenaria, ORCHIS.

15—12. HALESIA. 37. 74.

Southern.

tetraptera, W. (snow-drop tree. O. w. Ap. ♄.) leaves lance-oval, acuminate, serrulate: coroi 4-cleft: flowers dodecandrous: fruit equally 4-winged.

diptera, W. (E. w. Ap. ♄.) leaves lance-oval and ovate, acuminate, serrulate: petals 4: flowers octandrous: fruit compressed, with 2 large wings.

parviflora, Mx. (E. ♄.) fruit unequally and somewhat 4-winged, clavate, small: flowers small. Gordonia.

21—4. HALYMENIA. 57. 2.

palmata, frond flat, sub-palmate; divisions oblong, sub-simple: colour reddish-purple: substance at first thin and membranaceous, at length passing into a soft leathery substance. In the sea. Ulva.

4—2. HAMAMELIS. 54. 73.

virginica, W. (witch hazle. O. y. Oc. ♄.) leaves obovate, acute, toothed, cordate, with a small sinus. Var. *parvifolia*, (A.) leaves oblong-ovate, upper part undulate-coarse-crenate, pubescent and somewhat hirsute beneath: divisions of the calyx oblong: flowers in the fall and perfects the fruit the next summer. 5—15 f. *S.*

Southern.

macrophylla, Ph. (E. ♄.) leaves round sh, cordate, coarsely and obtusely toothed: scabrous and punctate beneath. A doubtful species. Aphanes.

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(1) bifolia, 3d Ed. Man. proposed and described as a new species by Ea. 1822, named by T. 1826. (2) Orchis, Bw. (3) michauxii, N. Orchis, Mx.

20—5. Hamiltonia. 43. 95.

oleifera, W. (1) (oil-nut. A. g-y. J. ♄.) pubescent: leaves oblong, entire, acuminate: flowers in terminal racemes. Flowers small. 4—6 f. *S.*
Zanthoxylum.

13—1. Hedeoma. (2) 42. 39.

pulegioides, (penny-royal. O. b. J. ☼.) pubescent: leaves oblong, serrate: peduncles axillary, whorled. 6—8 i. *S.*
glabra, P. (O. r-p. Au. 2f.) smooth: stem surculose: radical leaves nearly oval; cauline ones oblong-linear, all entire: flowers axillary, mostly solitary, long-peduncled. 6—12 i. *S.*

Southern.

hispida, Ph. (3) (W. Ju. ☼.) branching, pubescent: leaves linear, acutish at both ends, very entire, veined, revolute at the margin: whorls many-flowered: calyx strigose. 3—6 i.
bracteolata, N. (E.) pubescent: stem simple, slender,: leaves linear, sub-lanceolate, acute at each end, entire: pedicels 3—5-flowered: bracts setaceous.
Cunila.

5—1. Hedera. 46. 58.

Exotic.

helix, (english ivy. g-w. S. ♄.) leaves 3 or 5-lobed; floral ones ovate: umbel erect.
Thesium.

Hedera, Ampelopsis.

4—1. Hedyotis. 13. 84.

glomerata, Mx. (4) (creeping green head. E. w-g. M. ☼.) stem assurgent: leaves lanceolate, pubescent, attenuate at the base: flowers fascicled, axillary and terminal. *S.*
Houstonia.

16—10. Hedysarum. 32. 93.

canadense, (bush trefoil. O. r. Ju. 2f.) erect, smoothish: leaves ternate, lance-oblong: stipules filiform: flowers racemed: bracts lance-ovate, acuminate, ciliate: joints of the loment obtusely triangled, hispid. 3 f. *S.*
canescens, W. (r-b. Au. 2f.) erect, pilose: stem angled, ciliate, hispid: leaves ternate, roundish, with close-pressed hairs beneath: stipules ovate, acuminate: racemes panicled: bracts cordate: joints of the loment triangular, hispid. *S.*
marilandicum, W. (p. Ju. 2f.) erect, branching, pilose: leaves ternate, oblong, villose beneath: stipules subulate: racemes panicled: loment 3-jointed; the joints rhomboid, reticulate, a little hairy. *S.*
ciliare, W. (O. p. Au. 2f.) erect, sub-pubescent: leaves ternate, ovate, short-petioled, pubescent beneath, margin ciliate: stipules filiform: panicle terminal: joints of the loment (2 or 3) half-orbicular, hispid, reticulate. Var. *oblongifolium*, E. leaves longer, nearly glabrous, sub-glaucous beneath, long-petioled. 2 f. *S.*
viridiflorum, L. not Ph. (g. & p. J. 2f.) erect: leaves ternate, ovate, obtuse, scabrous on the upper surface, soft-villous beneath: panicle terminal, long, naked: joints of the loment triangular. E. 3—4 f. *S.*
aikini, Ea. (5) (E. g. & p. Au. 2f.) erect, branching, pubescent: leaves ter-

(1) Pyrularia pubera, Mx. (2) Cunila, L. (3) hirta, N. (4) Oldenlandia, Mx. (5) viridiflorum, Ph. not Lin. See Elliott. Vol. II. p. 217. As the viridiflorum of Linneus is retained by Elliott and Torrey, and as we certainly have Pursh's plant in abundance, it becomes necessary to give the latter a new name. I have given this name as an expression of my esteem for Dr. William Aikin, a most indefatigable and very acurate young botanist.

nate, ovate-oblong and sub-deltoid, acute-mucronate, scabrous beneath: stipules cuspidate: racemes panicled, bracted. Flowers become greenish in full maturity. 3 f. Very abundant on the islands about Troy, N. Y.

obtusum, W. (E. p. & g. Au. 2f.) erect, slender, sub-pubescent: leaves ternate, ovate, obtuse, sub-cordate at the base: stipules subulate: panicle terminal: joints of the loment sub-orbiculate, reticulate, hispid. 1—2 f. *S.*

humifusum, M. (E. p. Au. 2f.) stem prostrate, sub-glabrous: leaves ternate; leafets ovate or oval, acutish, slightly hairy: racemes elongated: joints of the loment sub-rhomboidal, hispid.

rotundifolium, Mx. (O p. Au. 2f.) prostrate, hirsute: leaves ternate, orbicular, pilose both sides: stipules round-cordate, reflexed: racemes axillary, and in the terminal panicles few-flowered: joints of the loment sub-rhombic, reticulate-scabrous. 2—3 f. *S.*

paniculatum, W. (E. p. Ju. 2f.) erect: leaves ternate, lance-linear, smoothish, revolute at the margin: stipules subulate: panicle terminal: loment hispid; joints somewhat triangular. 2—3 f. *S.*

strictum, Ph. (O. p. Ju. 2f.) stiffly erect, glabrous, simple: leaves ternate, sub-linear, net-veined: stipules subulate: racemes axillary and terminal: loments about 2-jointed; joints lunate-triangular, hispid. 2—3 f. *S.*

levigatum, N. (E. p. Au. 2f.) very smooth: stem simple, erect, sub-glaucous: leaves ternate, long-petioled; leafets ovate, acute: stipules subulate, minute, caducous: panicle terminal, sub-simple: flowers in pairs on long peduncles: bracts ovate, acute, shorter than the flower-buds: joints of the loment triangular, hispid. *S.*

nudiflorum, (E. p. Ju. 2f.) leaves ternate, broad-oval, acuminate, sub-glaucous beneath: scape panicled, glabrous, radical, taller than the stem: joints of the loment round-triangular. 1—2 f. *S.*

glutinosum, W. (O. p. Ju. 2f.) erect, simple: leaves long-petioled, ternate, round-ovate, acuminate: panicle scape-like, proceeding from one side of the base of the stem: peduncles with glutinous hairs: joints of the loment oblong-triangular, a little glabrous. *S.*

acuminatum, Mx. (O. p. Ju. 2f.) erect, simple, pubescent, leafy at the summit: leaves ternate, ovate, long-acuminate, with scattered hairs on both sides, close-pressed, long-petioled; the odd leafet round-rhomboid; panicle long-peduncled, terminal. 1—2 f. *S.*

bracteosum, Mx. (1) (O. r. Au. 2f.) erect, glabrous: leaves ternate, oblong-oval, acuminate: stipules subulate: racemes terminal, with scattered flowers: bracts ovate, acuminate, striate, glabrous: joints of the loment sub-oval. 3—5 f. *S.*

alpinum, Var. *americanum*, Mx. (2) (A. p. 2f.) erect: leaves pinnate; leafets oval-oblong, hairy: stipules partly sheathing: joints of the loment roundish. *S.*

glabellum, Mx. (O. p. Ju. 2f.) erect, glabrous: leaves ternate, ovate-obtuse, sub-glaucous beneath: stipules small, subulate: panicle terminal: joints of the loment rhomb-triangular. 2 f. *S.*

Southern.

lineatum, Mx. (E. 2f.) stem creeping, striped with green: leaves ternate, roundish, sub-sessile: racemes long, with small scattered flowers: joints of the loment lenticular.

rigidum, E. (E. p. Au. 2f.) erect, very branching: leaves oblong-ovate, obtuse, reticulate, pubescent: panicle branching: bracts lance-ovate, acuminate. 3 f.

rhombifolium, E. (E. p. S. 2f.) pubescent: leaves ternate, rhomboid, obtuse, thick, reticulate, rugose: panicle compound: bracts small: loment 1—3-jointed: joints roundish, veined. 2—3 f.

scaberrimum, E. (E. p. Ju. 2f.) erect, very scabrous: leaves ternate, ovate,

(1) *cuspidatum*, W. (2) *boreale*, N?

tapering towards the apex, acute, pilose-pubescent: stipules ovate, acuminate, persistent: panicle terminal: joints of the loment somewhat triangular, very hispid. 3—4 f.

pauciflorum, N. (W. w. 2f.) decumbent: stem filiform: leaves ternate, long-petioled; leafets broad-ovate, acuminate, pubescent-ciliate; terminal one broad-rhomboid: stipules obsolete: raceme terminal, peduncled, shorter than the leaves, very few- (4—8,) flowered. Lespedeza.

Hedysarum, LESPEDEZA.

17—2. HELENIUM. 49. 55.

autumnale, (false sunflower. O. y. Au. 2f.) leaves lanceolate, serrate, sub-decurrent: stem corymbed above: disk florets 5-cleft: rays flat, reflexed. Var. *pubescens*, leaves pubescent. 3—5 f. *S.*

Southern.

canaliculatum, Lk. leaves lanceolate, serrate, sub-decurrent: stem simple: disk florets 5-cleft: ray-floretschannelled.

quadridentatum, Mx. (O. Ju. 2f.) leaves broad-decurrent; lower ones subpinnatifid; upper ones lanceolate, entire, glabrous: disk florets 4-toothed. 3—4 f. Zinnia.

Helianthemum, CISTUS.

17—3. HELIANTHUS. 49. 55.

1. *Leaves opposite.*

atrorubens, W. (W. y. & p. Au. 2f.) hispid: stem nakedish above, lax-panicled: leaves spatulate, ovate, crenate, 3-nerved, scabrous above: scales of the calyx lance-ovate, of the length of the disk. 3—4 f. *S.*

divaricatus, (E. y. Au. 2f.) stem glabrous, very branching: leaves nearly opposite, sessile, lance-ovate, 3-nerved, scabrous above, smooth beneath: panicle trichotomous, slender, few-flowered. 5—6 f. *S.*

frondosus, W. (E. Can. y. Ju. 2f.) stem glabrous below: leaves petioled, ovate, sharply serrate: peduncles scabrous: calyx squarrose, undulate, leafy, ciliate: rays 8-flowered. 4—5 f.

trachelifolius, W. (1) E. y. Au. 2f.) leaves lance-ovate, acuminate, serrate, 3-nerved, very rough both sides: scales of the calyx lance-linear, ciliate; outer ones longest. 2—4 f. *S.*

hispidulus, E. (W. y. S. 2f.) stem scabrous: leaves sessile, lance-ovate, tapering towards the summit, serrulate, scabrous above, paler and slightly hispid beneath: scales of the calyx lance-ovate, ciliate: chaff 3-toothed. 3—4 f. *S.*

2. *Upper leaves alternate.*

angustifolius, W. (2) (E. y. & p. O. 2f.) stem slender, slightly scabrous: leaves narrow-lanceolate, revolute at the margin, scabrous, entire, glaucous beneath: scales of the calyx lance-linear, ciliate, expanding: chaff 3-toothed. 3—5 f. *S.*

mollis, W. (E. y. Ju. 2f.) stem smooth below, scabrous above: leaves lance-ovate, acute, serrate, scabrous above, pubescent and hoary beneath: flowers few, terminal. 3—6 f. *S.*

strumosus, W. (O. y. 2f.) leaves ovate, acuminate, serrate, 3-nerved, scabrous beneath: scales of the calyx lance-linear, ciliate at the base.

altissimus, W. (O. y. Au. 2f.) leaves alternate, lance-ovate, serrate, scabrous,

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(1) gigas, Mx. (2) Rudbeckia, W. in the same work.

3-nerved, slender at the apex, with ciliate petioles: scales of the calyx lanceolate, ciliate. Chaff on the receptacle green: stem purple. 4—8 f. *S.*

giganteus, W. (y. S. 2f.) leaves lanceolate, scabrous, alternate, obscurely 3-nerved, sub-sessile, attenuate at each end, ciliate at the base: scales of the calyx lanceolate, ciliate. Var. *crinitus*, leaves approximate, long, lance-linear, acuminate, sub-entire, scabrous, sub-sessile, both sides coloured alike: calyx squarrose; segments linear. 5—6 f. *S.*

decapetalus, (O. y. Au. 2f.) leaves ovate, acuminate, remotely serrate, 3-nerved, scabrous, pubescent beneath: scales of the calyx lanceolate, sub-equal, sub-ciliate: rays ten or twelve. 3—4 f. *S.*

multiflorus, W. (A. S. 2f.) leaves 3-nerved, scabrous; lower ones cordate; upper ones ovate: rays many-flowered: scales of the calyx lanceolate. *S.*

macrophyllus, W. (y. Au. 2f.) leaves ovate, acuminate, 3-nerved, serrate, scabrous above, white-pubescent beneath: scales of the calyx linear, squarrose. *S.*

petiolaris, N. (W. y. & p. Au. ☼.) leaves alternate, ovate, acute, somewhat entire, very long-petioled, scabrous: stem erect, branching: flowers long-peduncled: seeds villose. *S.*

Exotic.

tuberosus, (jerusalem artichoke. y. S. 2f.) leaves 3-nerved, scabrous; lower ones heart-ovate; upper ones ovate, acuminate: petioles ciliate. Root tuberous. Naturalized. 4—8 i.

annuus, (common sunflower. y. & w. Ju. 2f.) leaves all cordate, 3-nerved: peduncles thickening upwards: flowers nodding. 6—10 f.

Southern.

1. *Leaves opposite.*

pubescens, W. (1) (W. y. Au. 2f.) hoary-pubescent: stem villose: leaves sessile, heart-ovate, clasping, 3-nerved, crenulate, very soft: scales of the calyx lanceolate, villous. 2—3 f.

longifolius, Ph. (O. y. S. 2f.) very glabrous: stem panicled: branches few-flowered at the summit: leaves sub-sessile, very long-lanceolate, 3-nerved, very entire; lower ones serrate: scales of the calyx ovate, acute; outer ones linear, divaricate. 4—7 f.

sparsifolius, E. (E. y. & p. Au. 2f.) stem scabrous: branches sub-glabrous; leaves ovate, acute, coarsely toothed, hispid, very scabrous on both sides, abruptly contracted into the petiole: scales of the calyx lance-oval, ciliate. 4—5 f.

truncatus, Sz. (E. y. S. 2f.) stem slender, glabrous: leaves ovate, serrate, tapering towards the apex, hairy, scabrous, closely sessile: scales of the calyx lance-ovate, ciliate: chaff lanceolate, ciliate, pubescent. 2 f.

tenuifolius, E. (E. y. S. 2f.) stem smooth: leaves lance-ovate, acuminate, coarsely serrate, a little scabrous on both sides, long petioled, membranaceous: scales of the calyx lanceolate, ciliate: flowers small. 4 f.

spatulatus, E. (E. y. S. 2f.) stem scabrous above: leaves spatulate-ovate, sub-acuminate, serrate, scabrous above, pubescent beneath: branches opposite: scales of the calyx lanceolate, hispid: chaff acuminate, entire. 4—6 f.

tricuspis, E. (E. y. S. 2f.) leaves oblong, lance-ovate, scabrous on both sides: scales of the calyx broad-subulate, ciliate: chaff of the receptacle tricuspidate. 3—4 f.

diversifolius, E. (E. y. S. 2f.) stem scabrous: lower leaves lance-ovate, acuminate; upper ones heart-ovate, mucronate; all scabrous above, and pubescent beneath: scales of the calyx lanceolate, ciliate: chaff slightly 3-toothed. 3—5 f.

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(1) mollis, Lk. canescens, Mx.

scaberrimus, E. (E. y. S. 2f.) leaves lanceolate, very scabrous on both sides, nearly entire : scales of the calyx ovate : chaff of the receptacle entire, ciliate on the back. 4—6 f.

tubaeformis, W. (W. ☼.) leaves cordate, wedge-form at the base, villose, 3-nerved : peduncles thickened, hollow.

laetiflorus, P. (2f.) leaves opposite, ovate-oblong, 3-nerved, serrate, rough : peduncles elongated : scales of the calyx lanceolate, erect, ciliate : rays many-flowered, very long.

pauciflorus, N. (W. y.) leaves lance-linear, acuminate, serrate, smoothish : stem naked, trichotomous, few-flowered : calyx close-imbricate ; divisions ovate. 4—5 f.

2. *Upper leaves alternate.*

tomentosus, Mx. ? E. (E. y. S. 2f.) stem rough : leaves lance-ovate, tapering to the summit, acute, serrulate, scabrous above, tomentose beneath, generally alternate : scales of the calyx leafy, squarrose, lanceolate : chaff 3-cleft. 4—6 f.

aristatus, E. (E. y. S.) stem erect, scabrous : lower leaves opposite, closely sessile, lance-oval, acute, toothed, scabrous, hairy beneath : corymbs few-flowered : seeds compressed : awns 2, persistent. This species appears to be intermediate between Actinomeris and Helianthus, and may belong to a distinct genus. Elliott. 2—3 f. Rudbeckia.

17—2. Heliopsis. 49. 55.

lævis, P. (1) (ox-eye. O. Ju. 2f.) stem glabrous : leaves opposite, ovate, serrate, 3-nerved, smooth. 3—5 f. *S.* Helenium.

5—1. Heliotropium. 41. 42.

Southern.

indicum, (turnesole. E. b. Ju. ☼.) leaves heart-ovate, acute, roughish : spikes solitary : fruit bifid. 8—12 i.

curassavicum, (O. y-w. J. ☼?) leaves narrow lanceolate, succulent, glabrous, without veins : spikes conjugate. 6—12 i.

europeum, (E. w. ☼.) leaves ovate, very entire, tomentose, rugose : spikes conjugate. Inodorous. Anagallis.

12—13. Helleborus. 26. 61.

foetidus, (hellebore.) stem many-flowered, leafy : leaves pedate, remotely serrate, coriaceous : corol somewhat converging. Magnolia.

Helleborus, Coptis.

6—3. Helonias. 10. 13.

latifolia, Mx. (2) (helonias. E. p. M. 2f.) scape almost leafless : spike ovate, crowded : bracts lance-linear : leaves lanceolate, mucronate, nerved. *S.*

erythrosperma, Mx. (3) (w. & g. J. 2f.) scape leafy : racemes oblong : bracts short : leaves linear, very long : seed ovate, reddish : capsule shortened with divaricate horns. 2 f. *S.*

angustifolia, Mx. (E. J. 2f.) scape leafy : leaves linear, subulate : raceme simple, terminal : capsules oblong, covering at the summit : seeds linear. 2 f. *S.*

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(1) Helianthus laevis, L. Rudbeckia oppositifolia, L. in another place. Buphthalmum helianthoides, W. Silphium solidaginoides, L. the last time he notices it: (2) bullata, W. (3) Helianthium luteum, W. phalangioides, Lk. muscaetoxicum, Wr. Anthericum subtrigynum, Jn.

dioica, Wr. (1) blazing star, false unicorn root. E. w. J. 2f.) scape leafy : racemes spiked, nodding : pedicels short, sub-bracted : filaments longer than the corol : petals linear : leaves lance-oblong. Generally dioecious. 1—2 f. *S.*

Southern.

subia, Mx. (E. 2f.) leaves grass-like, very long and narrow : scape naked spike slender : flowers small, sessile. 2—3 f. Xerophyllum.

Helonias, XEROPHYLLUM.

21—6. HELVELLA. 58. 1.

nigricans, small, from sooty-yellow becoming black : pileus free but pressed together both sides : pileus smooth, having bran-like scales in some cases. Morchella.

6—1. HEMEROCALLIS. 10. 16.

Exotic.

flava, (yellow day-lily. y. Ju. 2f.) leaves broad-linear, keeled : petals flat, acute ; nerves of the petals undivided.

fulva, (tawny day-lily. y. Ju. 2f.) leaves linear-lanceolate, keeled : three inner petals obtuse, undulate ; nerves of the outer petals branching. Naturalized. 3 f. Polyanthes.

2—1. HEMIANTHUS. 40. 40.

micrantha, Ph. (2) (E. w. Au. ☼.) glabrous, succulent : leaves closely sessile, ovate, and oval, obtuse, entire, nerved : peduncles shorter than the leaves : calyx 5-cleft : style 2-cleft. *S.* Catalpa.

12—13. HEPATICA. 26. 61.

acutiloba, Dc. (heart-liverleaf. O. w. & b. Ap. 2f.) leaves cordate, 3 to 5-lobed ; lobes entire, acute : leaves of the calyx acute. Grows in woods, prefering the north side of hills and mountains. This is the Var. *acuta* of the *triloba*, of W. 5 i.

americana, Dc. (kidney-liverleaf. O. w. & b. Ap. 2f.) leaves heart-reniform, 3-lobed ; lobes entire, round-obtuse : leaves of the calyx obtuse. Grows chiefly in woods, prefering the south side of hills and mountains. This has been mistaken for the *triloba* of W. 5 i.

The last species has lately come into great repute as a *tonic*, *deobstruent* and *diuretic*. Prof. Tully believes its powers are exaggerated, and that it cannot be relied on in a dangerous disease ; but that it may be considerably useful in moderate complaints. It ought not to be called the Liverwort, as this is the well known name of the Marchantia polymorpha. Its true English name is Liverleaf. Ranunculus.

5—2. HERACLEUM. 45. 60.

lanatum, Mx. (O. w. Ju. 2f.) petioles and nerves of the leaves very villose beneath : leafets petioled, broad, round-cordate, sub-palmate-lobed : seed orbicular. A large umbelliferous plant of a white woolly appearance. Meadows and other damp places. Very poisonous.

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(1) pumila, Jn. Melanthium dioicum, Wr. densum, Lk. Veratrum luteum, L. It is still placed where Linneus left it by N. but it differs too widely in habit and sensible qualities to remain with the Veratrum viride. (2) micranthemoides, N. Herpestis, Ph.

Southern.

spondilium, (W. ♂.) leaves pinnate: leafets 5, oblong, pinnatifid, acute, dentate: corol nearly uniform. Angelica.

13—2. HERPESTIS. (1) 40. 40.

cuneifolia, Mx. (b. Au. 2[.) very glabrous: leaves wedge-obovate, obscurely crenate above: peduncles as long as the leaves: corol 5-cleft. *S.*

Southern.

rotundifolia, Mx. (O. b. Au.) finely pubescent: leaves oval, roundish, many-nerved: peduncles opposite as long as the leaves: corol 4-cleft.

amplexicaulis, Mx. (2) (E. Au.) stem woolly: leaves cordate, clasping, entire, obtuse: peduncles shorter than the leaves: corol 4-cleft.

brownei, Ph. (W.) leaves oblong, entire: peduncles longer than the leaves: stem declined. Limosella.

14—2. HESPERIS. 39. 63.

pinnatifida, Mx. (wild rocket. E. J. ♂.) leaves sharply serrate; upper ones lanceolate, lower ones pinnatifid: silique sub-peduncled: pedicel at length much longer than the calyx. 1 f. *S.*

Exotic.

tristis, (yellow rocket. ♂.) stem hispid; branches spreading: leaves lance-ovate: silique sword-form.

matronalis, (garden rocket, dame violet. 2[.) stem simple, erect: leaves lance-ovate, denticulate: petals emarginate, mucronate. Var. *hortensis*, flowers double, odoriferous, white. Sinapis.

3—1. HETERANTHERA. 6. 17.

reniformis, Mx. (3) (mud-plantain. g-w. Ju. 2[.) leaves round-reniform: spathe oblong, acuminate, 2—3-flowered. 4—8 i. *S.*

Southern.

ovalis, Mx. (4) (W. b. Ju. 2[.) leaves ovate-oblong: spathe lanceolate, one-flowered. Syena.

5—2. HEUCHERA. 13. 84.

americana, (5) (alum root. E. r. Ju. 2[.) viscid-pubescent: scape and leaves roughish: leaves round-lobed, with dilated obtuse mucronate teeth: panicle dichotomous: calyx short, obtuse: petals lanceolate as long as the calyx: stamens exsert. 2—3 f. *S.*

pubescens, Ph. (O. r.& y.J.2[.) dusty-pubescent: scape glabrous below: leaves sub-acute-lobed, toothed, glabrous beneath: peduncles of the panicle short, with crowded flowers: calyx large, bell-form: petals longer than the calyx, large: stamens scarcely exserted. 2 f. *S.*

Southern.

hispida, Ph. (A. p. J. 2[.) hispid, scabrous: scape, petioles and leaves glabrous beneath: leaves hispid-pilose above, acute-lobed, toothed; teeth very short, sub-retuse, mucronate: peduncles of the panicle few-flowered: calyx shortish, sub-acute: petals spatulate as long as the calyx: stamens exsert.

caulescens, Ph. (A. w. J. 2[.) suffruticose at the base: scape at the base, and petioles pilose: leaves glabrous above, pilose at the nerves beneath, acutely lobed, ciliate, dentate; teeth acute, mucronate: calyx short, villose: petals linear twice as long as the calyx: stamens exsert.

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(1) Monniera, Mx. (2) Obolaria caroliniana, Wr. (3) acuta, Vahl. Leptanthus, Mx. virginica, P. (4) limosa, Vahl. Leptanthus, Mx. (5) cortusa, Mx. viscida, Ph.

villosa, Mx. (A. w. J. 2f.) very villose : leaves acutely lobed, toothed; teeth acute, mucronate : fascicles of the panicle, capillary, lax-flowered : calyx short : stamens exsert. Parox.

16—13. HIBISCUS. 37. 74.

moscheutos, W. (1) (marsh mallow. w. & p. Au. 2f.) leaves ovate, acuminate, serrate, sub-3-lobed, sub-5-nerved, white-downy beneath : peduncles flower-bearing : calyx downy : capsule glabrous. 4—6 f. *S.*

palustris, (marsh hibiscus. E. p. Au. 2f.) leaves broad oval, obtusely serrate, sub-3-lobed, 3-nerved, downy beneath, acuminate : peduncles axillary, longer than the petiole. 3—4 f.

militaris, (2) (W. w-r. Au. 2f.) very glabrous : leaves 3-lobed, hastate, acuminate, serrate : corol tubular-campanulate : capsules ovate, acuminate, glabrous : seeds silky. 3—4 f. *S.*

virginicus, (3) (sweat weed. L. r. Au. 2f.) downy, rough : leaves acuminate, unequally toothed ; lower ones cordate, undivided ; upper ones cordate-oblong, 3-lobed : peduncles axillary, and in terminal racemes : flowers nodding : pistils nodding. 2—4 f. *S.*

Exotic.

phœniceus, (phenicean mallows. r. Ju. 2f.) leaves ovate, acuminate, serrate and crenate, lower ones 3-cuspidate : peduncles jointed : seeds woolly. 6—8 f.

syriacus, (syrian mallow. w. & p. Au. ♄.) leaves wedge-ovate, 3-lobed, toothed : outer calyx about 8-leaved, of the length of the inner. 5—10 f.

esculentis, (okra. y. Ju. ☼.) leaves heart-5-lobed, obtusish, toothed : petiole longer than the flower : outer calyx about 5-leaved, caducous, bursting lengthwise. 3 f.

trionum, (bladder ketmia, flower of an hour. ☼.) outer calyx many-leaved, inner one inflated : capsule membranaceous : leaves toothed, upper ones 3-parted. 6—18 i.

Southern.

grandiflorus, Mx. (O. r. Au. 2f.) leaves large, coriaceous, triangular-cordate, 3-lobed, tomentose on both sides, hoary beneath : capsules tomentose, subtruncate. 5—7 f.

incanus, W. (E. y-w. S. 2f.) leaves ovate, acuminate, obtusely serrate, hoary-tomentose on both sides : peduncles axillary : calyx tomentose, nearly equal.

coccineus, Wr. (4) (E. r. Au. 2f.) very glabrous : leaves palmate-5-parted ; divisions lance-linear, acuminate, remotely serrate at the apex : capsule ovate, glabrous. 4—8 f.

manihot, W. (W. y. & p. Au. 2f.) stem and petioles unarmed : leaves palmate-digitate, 7-parted ; divisions linear : peduncles hispid : outer calyx 1-leaved ; inner one torn : capsule very hirsute, pyramidal.

scaber, Mx. (5) (E. y. & p. Au. 2f.) stem scabrous : lower leaves cordate, angled ; upper ones palmate, 3—5-lobed ; lobes irregular-dentate, angled : calyx very hispid ; inner one twice as long as the outer. 3 f.

carolinianus, M. (E. p. Au. 2f.) leaves cordate, ovate, acuminate, serrate, smooth on both sides, sometimes sub-3-lobed : seeds hispid. 4—6 f. Lavatera.

17—1. HIERACIUM. 49. 53.

venosum, (vein-leaf hawkweed. O. y. Ju. 2f.) scape naked, corymb-panicled glabrous : leaves lance-obovate with thin hairs above and naked beneath,

(1) palustris, Wr. (2) virginicus, Wr. hastatus, Mx. riparius, P. (3) clypeatus, Wr. (4) speceosus, A. (5) aculeatus, Wr.

margin ciliate, glandular-toothed, veins coloured : calyx glabrous. 1—2 *f. S.*

gronovii, (O. y. Ju. 2f.) scape leafy, naked above, corymb-panicled: calyx and peduncles glandular-pilose : radical leaves obovate and lanceolate, ciliate, very pubescent. Var. *nudicaule*, stem about one-leaved : panicle somewhat fastigiate. 2—3 f. *S.*

paniculatum, W. (O. y. Ju. 2f.) somewhat glabrous : stem erect, leafy, panicled, white-woolly below : pedicels capillary : leaves lanceolate, naked, toothed, membranaceous. 2—4 f. *S.*

kalmii, W. (O. y. Au. 2f.) stem erect, many-flowered, smooth, downy above : leaves sub-sessile, lanceolate, acuminate, sharply toothed outside : peduncles axillary and terminal, downy.

marianum, W. (1) (O. y. Ju. 2f.) stem erect, villose : leaves oval-obovate, strigose, villose on the keel, lower ones sub-dentate : peduncles and calyxes downy. 1—2 f. *S.*

pusillum, W. (E. y. Ju. 2f.) small, very villose : stem simple, erect, one-flowered, somewhat 2-leaved : leaves remote lanceolate, slenderly tapering, acute, entire ; cauline ones linear : calyx very villose. Probably a variety of *H. alpinum*. Ph. Labrador.

molle, W. (E. y. Au. 2f.) pilose : stem erect, simple, leafy, corymbed, few-flowered : leaves lance-oblong, attenuate, sparingly toothed below ; radical ones petioled. Labrador.

virgatum, Ph. (2) (O. y. Ju. 2f.) stem erect, simple, villose : leaves sessile, lanceolate, acute, glabrous, pilose beneath, sharply repand-toothed at the margin, entire towards the apex : panicle sub-corymbed : calyx and peduncle tomentose. Var. *scabrum*, Sz. leaves smaller, scabrous, more rigid. 2—3 f.

fasciculatum, Ph. (E. y. Au. 2f.) somewhat glabrous : stem erect, leafy, simple, glabrous : leaves sessile, oblong, acute, sharply toothed ; teeth elongated : branches of the panicle divaricate, short : pedicels pubescent, somewhat fascicled.

macrophyllum, Ph. (y. 2f.) very tall : stem erect, leafy, hispid, sulcate : leaves cordate, half-clasping, ovate-oblong, remotely coarse-toothed, nearly naked : nerves and veins pubescent beneath : panicle divaricate-corymbed : peduncles elongated, naked, glabrous : calyx glabrous.

scabriusculum, Sz. & Say. (W. y.) stem glabrous, erect, terete, sulcate, leafy : leaves lance-ovate, sessile, clasping, sub-dentate, scabrous and somewhat involute at the margin, rugose above, glaucous and pilose beneath : calyx smoothish.

Exotic.

aurantiacum, (orange hawkweed. y. 2f.) scape leafy, hispid : flowers corymbed : peduncles glomerate : leaves oblong, acutish, pilose-hispid.

Southern.

runcinatum, J. (W.) hirsute : leaves radical, oval-oblong, runcinate : scape few-flowered, angular : calyx glandular-pilose. 1 f. Krigia.

3—2. HIEROCHLOA. 4. 10.

borealis, Sch. (3) (sweet summer grass, seneca grass. M. 2f.) panicle subsecund, a little spreading : peduncles smooth : florets unarmed : lower valve of the corol ciliate on the margin : root creeping. 18 i.

alpina, Wahl. (A. J. 2f.) panicle ovate, contracted : spikelets compressed, longer than the branches : glumes lanceolate, nearly nerveless : lateral florets triandrous ; one of them with an awn about as long as the valves ; sides almost smooth, margins ciliate. 6—8 i. Holcus.

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(1) scabrum, Mx. (2) canadense, Mx. (3) fragrans, Rs. Holcus odoratus, Mx. lanatus, L.

21—6. Himantia. 58. 1.

domestica, large tawny violet, soft; somewhat cohering in a membrane. Often between timbers of a building.
sulphurea, pale sulphur-yellow, flaxen and fibrous; branches sub-terete, interwoven. On trunks.
candida, white, thin and tender; dilated at the apex and sub-plumose. On fallen leaves. Mesenterica.

20—8. Hippophae. 16. 24.

canadensis, W. (sea buckthorn. M. ♄.) leaves ovate, acutish, a little glabrous above, silver-haired and brilliant beneath: scales scattered, ferruginous. 6—8 f.
argentea, Ph. (W. ♄.) leaves ovate, obtuse, glabrous on both sides and covered with silvery scales. 12—18 f. Serpicula.

1—1. Hippuris. 15. 88.

vulgaris, (mares tail. ý-g. M. 2ſ.) leaves linear, and lance-linear, verticillate in 6s, 8s, 9s. *S.* Canna.

3—2. Holcus. 4. 10.

lanatus, (E. J. 2ſ.) panicle equal: florets shorter than the calyx; superior one with a recurved awn: root fibrous. 1—2 f. Pennisetum.

Holeus, Hierochloa, Koeleria.

3—3. Holosteum. 22. 82.

succulentum, (L.) leaves elliptic, fleshy: petals somewhat 3-cleft, shorter than the calyx. Mollugo.

15—12. Hopea. 37. 74.

Southern.
tinctoria, (sweet leaf. E. y. Ap. ♄.) leaves lance-oblong, glaucous, pubescent beneath: flowers sessile, axillary, in clusters. 15—18 f. Nuttallia.

3—2. Hordeum. 4—10.

jubatum, (O. J. ♂.) lateral florets abortive, neuter: awns of the calyx and corol 6 times as long as the flowers. 2 f. *S.*

Southern.
pusillum, N. (W.) lateral florets staminate or neuter, awnless, acute: four inner scales of the calyx coriaceous, dilated; all short awned: awns scabrous. 4—6 i. Decumbent.

Exotic.
vulgare, W. (barley. Ju. ☼.) florets all perfect, awned, in two erect rows.
distichon, W. (J. ☼.) lateral florets imperfect, awnless: seeds angular, imbricate. Monocera.

10—3. Hortensia. 13. 84.

Exotic.
speciosa, (changeable hydrangea. r. & w. J. ♄.) leaves broadly ovate, serrate, acuminate: flowers corymbed. From the East Indies. This is the common flower-pot shrub, usually called hyderindia. Micropetalum.

5—1. Hottonia. 21. 34.

palustris, (water violet. E. w. Ju. 2ſ.) flowers whorled, peduncled: stem

geniculate, with inflated joints: leaves pinnatifid; segments linear. *S.*
Samolus.

4—1 Houstonia. 47. 57.

cærulea, (1) (venus' pride, forget-me-not. O. b. & w. M. ♃.) stem erect, setaceous, dichotomous: radical leaves spatulate; cauline ones oblanceolate, opposite: peduncles 1-flowered, elongated. 4—6 i. *S.*

longifolia, W. (2) (E. p. Ju. ♃.) leaves narrow-lanceolate, tapering to each end: flowers corymbed. 6—12 i. *S.*

purpurea, W. (3) (O. p. w. Ju. ♃.) stem erect, branching above, pubescent at the joints: leaves sessile, ovate, lanceolate or lance-linear: fascicles terminal, corymbed. 4—8 i. *S.*

ciliolata, T. (W. p.) radical leaves ovate, obtuse, narrowed at the base, ciliate at the margin; cauline ones ovate-spatulate, sessile: corymbs terminal, pedicelled: peduncles trichotomous: divisions of the calyx lance-linear: stem smooth, branched above.

pubescens, R. (W.) leaves wedge-form, acute, pubescent; lower ones sub-petioled, lanceolate; upper ones sub-oval, sessile: panicle trichotomous, terminal.

Southern.

serpyllifolia, Mx. (O. b. M. ♃.) procumbent, cespitose: leaves spatulate, obtuse: peduncles terminal, 1-flowered, very long.

tenella, Ph. (A. b. J. ♃.) stem creeping, filiform: leaves round, acute, nerved: peduncles terminal, 1-flowered, very long. Smaller than the last.

rotundifolia, Mx. (L. w. Ap. ♃.) creeping: leaves ovate, roundish, abruptly narrowed at the base: peduncles axillary, solitary, 1-flowered. Leaves evergreen.

patens, E. (4) (E. p. March. ☼.) small: stem spreading, dichotomous, with scabrous angles: flowers solitary, terminal and axillary. 1—2 i.

tenuifolia, N. (W.) smooth: stem erect, divaricate, very branching: branches sub-trichotomous: leaves narrow-linear: corymbs terminal, sub-fastigiate, with long setaceous peduncles. 6 i.

minima, Bk. (W. p. March. ☼?) stem erect, simple, 4-cornered, somewhat scabrous: leaves opposite, spatulate-ovate, sub-acuminate, ciliate, scabrous on both sides: flowers peduncled, solitary, terminal. 1—1 1-2 i.
Mitchella.

12—1. Hudsonia. 18. 80.

ericoides, (false heath. O. y. J. ♄.) leaves acerose-subulate, hirsute: peduncles filiform, solitary. About 6 inches high; a very delicate shrub. Pine barrens.

tomentosa, N. (L. y. Ju.) hoary-tomentose: leaves ovate, imbricate, shorter than the intervals of the stem: flowers sub-sessile: calyx obtuse.

Southern.

montana, N. (A.) decumbent, smoothish, cespitose: leaves long, filiform-subulate, sub-imbricate: peduncles terminal, solitary: calyx bell-form, woolly: capsule villose. 3—5 i. Portulacca.

20—5. Humulus. 53. 98.

lupulus, (hop. O. g-y. Au. ♃.) stem twining with the sun: leaves lobed. One of the best of tonics. Cannabis.

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(1) linnei, Mx. (2) angustifolia, Mx. (3) varians, Mx. Hedyotis umbellata, Wr. Knoxia purpurea, Lk. (4) linnei, Var. Mx. coerulea. Var. minor, Ph.

21—4. HUTCHINSIA. 57. 2.

fastigiata, threads dichotomous, sub-equal, fastigiate: joints shorter than their diameters, marked in the middle with dark dots. In the sea. Will not adhere to paper.
violacea, very branching, diffuse: branches wand-like, spreading: lower joints shorter than their diameter, those of the branches six times as long. In the sea. Adheres to paper loosely.
stricta, threads straight, equal: branches dichotomous, erectish: joints about thrice as long as the diameter. Ceramium.

6—1. HYACINTHUS. 10. 16.

Exotic.

orientalis, (garden hyacinth. r. Ap. 2f.) corol funnel-form, half-6-cleft, ventricose at the base.
muscari, (musk hyacinth. b. Ap. 2f.) corols ovate, all equal.
botryoides, (grape hyacinth. b. Ap. 2f.) corols globose, uniform: leaves cylindric, channelled, straight.
comosus, (purple grape hyacinth. p.) corols angular-cylindric; upper flowers sterile, long-peduncled, erect.
racemosus, (hare-bell hyacinth. 2f.) flowers thick, ovate, those at the top sessile: leaves lax, pendant, linear, carinate. Tulipa.

21—6. HYDNUM. 58. 1.

imbricatum, (prickly fungus.) pileus fleshy, umbilicate, scaly: scales thick, sub-erect, obscure.
repandum, pale-fleshy: pileus rugose, flexuose, somewhat lobed, glabrous: teeth thickish, mostly compressed: stipe tuberous, a little out of the centre of the pileus. Sometimes it is halved.
concrescens, in groups, confluent: pileus corky, funnel-form, having zones, chesnut-brown: teeth slender, shining-tawny: stipe short, sub-tuberous, deformed. Colour varies with the season.
gelatinosum, gelatinous, white-glaucous: pileus flat both sides: stipe lateral. About three-fourths of an inch broad.
coralloides, large, very branching: branches crowded, incurved: terminal teeth sub-fascicled.
chrysorhizum, (paper punk.) yellow, membranaceous, stemless, spread: root golden-yellow, filiform, with intersecting branches; extending far along the grains of decaying wood. The root of this fungus has been often noticed several yards in length; but Dr. J. Torrey, of New-York, was the first, I believe, who traced it to the pileus, and proved it a *hydnum*. (1) Thelephora.

10—2. HYDRANGEA. 13. 84.

vulgaris, Ph. (2) (hydrangea. E. w. Au. ♄.) leaves oblong-ovate, obtuse at the base, acuminate, toothed, glabrous beneath: cymes naked. 5 f. *S.*
nivea, Mx. (3) (E. w. Ju. ♄.) leaves heart-ovate, acuminate, serrate, snow-white down beneath: cymes radiate. 6—8 f. *S.*

Southern.

cordata, Ph. (4) (A. Ju. 2f.) leaves broad-ovate, sub-cordate at the base, acuminate, coarsely toothed, glabrous beneath: cymes generally radiate.

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(1) Dr. Torrey did not publish this species in his catalogue, because some doubts had arisen since the publication of the second edition of the Manual. I have concluded to let it remain for the present. I am still inclined to believe it is a hydnum; but the pileus is rarely found. (2) arborescens, W. (3) radiata. Wr. (4) vulgaris, Mx.

quercifolia, Bart. (E. w. & r. Ju. ♄.) leaves oblong, sinuate-lobed, toothed, tomentose beneath: cymes radiate, thyrse-panicled. 4—5 f.
Saxifraga.

Hydrangea, HORTENSIA.

12—13. HYDRASTIS. 26. 61.

canadensis, (orange root. O. w-r. Ap. 2f.) stem with two opposite leaves above: leaves petioled, emarginate at the base, palmate, serrate, gashed: peduncle terminal, solitary, 1-flowered. Roots yellow. *S.* Clematis.

20—9. HYDROCHARIS. 1. 22.

Southern.

spongiosa, Bosc. (1) (E. w. Au. 2f.) monoecious: leaves floating, round-cordate, reticulate beneath, with vesicles at the base. Stagnant water.
Gymnocladus.

19—6. HYDROCHLOA. 4. 10.

fluitans, Mx. (2) (E. Ju. 2f.) small: stem slender, branching: leaves linear, flat: spikes solitary, axillary, setaceous, about 4-flowered: glumes unawned. *S.* Ceratophyllum.

5—2. HYDROCOTYLE. 45. 60.

umbellata, W. (water navel-wort. E. g-w. M. 2f.) leaves peltate, crenate, at the base emarginate: umbels peduncled, many-flowered. *S.*
americana, (O. g-w. J. 2f.) glabrous, tuberous: leaves sub-peltate, orbicular, doubly-crenate: glomerules few-flowered, sessile. Var. *flexicaulis*, stems firmer and shorter, somewhat flexuous-angled. Var. *gracilis*, slender, filiform, not flexuous: leaves smaller. Plant low and prostrate. Flowers very small. *S.*
vulgaris, (7) (g-w. J. 2f.) leaves orbicular, peltate, slightly crenate: scape interruptedly spiked, few-flowered. *S.*
ranunculoides, (3) (J. 2f.) leaves cordate, somewhat 5-lobed, crenate-dentate: umbels capitate, 8—10-flowered. *S.*
lineata, Mx. (4) (E. r-w. Ju. 2f.) glabrous, creeping: leaves sessile, cuneate-linear, with transverse nerves: umbels peduncled. *S.*
composita, Ph. (5) (E. w. Ap.) root tuberous: stem simple, 2-leaved: leaves sub-ternate; leafets many-cleft: umbel 3—5-flowered. 1 i. *S.*

Southern.

repanda, P. (E. r-w. Ju. 2f.) leaves round-cordate, somewhat repand: petioles and nerves pilose: heads 3-flowered, peduncled.
ambigua, Ph. (W. w.) radical leaves compound: stem nearly leafless, 2—3-umbelled: little umbels somewhat 3-flowered: petals lanceolate.
Smyrnium.

Hydroglossum, LYGODIUM.

5—2. HYDROLEA. 29. 43.

Southern.

quadrivalvis, Wr. (6) (E. b. Ju. 2f.) spinose, pilose: leaves long-lanceolate: flowers nearly sessile, axillary: capsules glabrous.
corymbosa, Macbride. (E. b. & y. Ju. 2f.) without spines: sub-glabrous: leaves lanceolate: calyx hispid: flowers terminal. 2 f.
spinosa, (W.) leaves lanceolate, hirsute: flowers terminal. Dichondra.

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(1) cordifolia, N. (2) zizania, Mx. (3) cymbalarifolia, M. (4) Crautzia, N. (5) bipinnata, M. Erigenia bulbosa, N. (6) caroliniana, Mx. (7) interrupta, M.

12—13. HYDROPELTIS. 26. 61.

purpurea, Mx. (1) (water shield. O. p. Au. 2ℓ.) leaves peltate, oval, entire: peduncles solitary, 1-flowered. The leaves float on the surface of water, having long flexible petioles. Plant mostly covered with mucilage. *S.*
Nelumbium.

5—I. HYDROPHYLLUM. 41. 42.

appendiculatum, Mx. (water-leaf. b. M. 2ℓ.) very hirsute: radical leaves sub-pinnatifid, cauline ones lobe-angled: sinuses of the calyx appendaged: the fascicles of flowers sub-panicled. Calyx very hispid. *S.*
virginicum, (burr-flower. O. b. J. 2ℓ.) smoothish: leaves pinnate and pinnatifid; divisions lance-oval, gash-serrate: fascicles of the flowers conglomerate. The flowers have the appearance of a burr several weeks before they expand. 9—18 i. *S.*
canadense, W. (rough burr-flower. O. p. & w. Ju. 2ℓ.) hirsute: leaves lobe-angled: fascicles of the flowers crowded. Resembles the last in some respects; but the leaves are much larger.

Southern.

lineare, Ph. (W. Ap. 2ℓ.) pilose: leaves linear: racemes elongated.
Ellisia.

17—1. HYMENOPAPPUS. 49. 55.

Southern.

scabiosaeus, Mx. (E. w. Ap. 2ℓ.) whitish-woolly: leaves deeply pinnatifid; divisions linear-oblong, sub-dentate: flowers corymbed. 2—3 f.
tenuifolius, Ph. (W. g-w. ♂.) whitish-woolly: stem corymb-branched: leaves sub-bipinnatifid; divisions narrow-linear, entire: flowers compoundly corymbed: pedicels crowded: calyx about 6-leaved, shorter than the florets; seeds very villose.
Polypteris.

21—1. HYMENOPHYLLUM. 55. 5.

ciliatum, W. (2ℓ.) frond pinnate: lower leafets larger; upper ones gradually smaller, pinnatifid; divisions linear, obtuse, 2-cleft, ciliate, hairy on the veins: rachis and stipe with ciliate wings. On trunks of trees. *S.*
Onoclea.

5—1. HYOSCYAMUS. 28. 41.

Exotic.

niger, (henbane. y. & p. Ju. ♂.) leaves clasping, sinuate: flowers veiny, sessile. Naturalized.
Convolvulus.

Hyoseris, KRIGIA.

12—5. HYPERICUM. 20. 68.

1. *Flowers with 5 styles.*

kalmianum, W. (y. Ju. ♄.) fruticose, very branching: branchlets 4-cornered: leaves lance-linear: corymbs terminal, 3—7-flowered: divisions of the calyx lanceolate, obtusish: capsule as long as the calyx. 3—5 f. *S.*
pyramidatum, W. A. (O. y. Ju. 2ℓ.) flowers pentagynous, terminal: styles *shorter* than the stamens: leafets of the calyx ovate, acute: stem somewhat

(1) Brasenia peltata, Ph.

4-sided, branching: leaves sessile (sub-amplexicaulis,) oblong, acute, glabrous. This plant has generally been mistaken for the next species; especially when it happened to be found without branches. But the relative length of the styles and stamens is always decisive. ☽ 3—6 f.

ascyroides, W. Mx. (pennsylvania?) ♃. or ♄.) flowers pentagynous, terminal: styles *equalling* the stamens in length: leafets of the calyx lance-ovate: stem 4-sided, simple, herbaceous (frutescent with 2-edged branches, Mx.) leaves sessile, oblong, acute, glabrous. Probably a Var. of the last, or not a North American plant.

2. *Flowers with* 3 *styles, or fewer.*

prolificum, W. (1) (W. y. J. ♄.) branches 2-edged: leaves lance-linear, obtusish: corymbs axillary and terminal, few-flowered: petals a little longer than the stamens: leafets of the calyx lanceolate. 1—3 f. *S.*

galioides, Lk. (E. y. Ju. ♄.) branches 4-sided: leaves linear, sessile, revolute at the margin, fascicled: panicles terminal, divaricate-dichotomous: petals and stamens equal, scarcely longer than the linear calyx: styles united, subexsert. 2 f. *S.*

perforatum, (2) (O. y. J. ♃.) erect, branching: stem 2-edged: leaves oblong, obtuse, transparently punctate: panicle terminal, brachiate, leafy: petals twice as long as the acute, lanceolate calyx. This is the common St. John's wort, so troublesome to farmers. 1—3 f. *S.*

corymbosum, W. (3) (O. y. Ju. ♃.) erect, glabrous, darkly-punctate: stem terete, branching: leaves clasping, oblong-oval, obtuse: corymbs terminal, brachiate, dense-flowered: divisions of the calyx lanceolate, acute. 18—24 i. *S.*

parviflorum, W. (4) (O. y. Ju. ♃.) erect, small, glabrous; dichotomous ramose, somewhat 4-sided: leaves ovate-oblong, sub-cordate, obtuse, nerved, sessile: panicles terminal, dichotomous-corymbed: petals shorter than the lanceolate calyx. 6—12 i. *S.*

canadense, (E. y. Ju. ☉.) erect, small, few-flowered: stem 4-sided, dichotomous above: leaves sessile, linear, slender at the base: the branches of the panicle opposite, the branchlets dichotomous: capsule long, conic, coloured. Capsules red. 9—18 i. *S.*

cupressum, B. (y. Ju. ♃.) stem erect, 2-edged immediately below each pair of leaves, and sub-cylindric near the root: leaves opposite, closely sessile, lanceolate-obtuse, transparently punctate, with very fine dots; those of the branches sub-linear, crowded; those of the cymes small, acute, crowded: flowers terminal and axillary, with obtuse, entire petals: style 1: capsule sub-conic.

petiolatum, Wr. (5) (E. y. Ju. ♃.) leaves petioled, oblong-oval, round-obtuse: flowers opposite, axillary, sub-sessile, sub-ternate: stamens adnate as far as the middle: capsule oblong. *S.*

angulosum, Mx. (6) (E. y-r. Ju. ♃.) erect: stem 4-sided: leaves oblong, acute, closely sessile: panicle terminal, dichotomous: branches divaricate, with distant, alternate flowers: calyx sub-campanulate; divisions lanceolate, acute, keeled below, almost as long as the corol: petals with a single lateral tooth. 2 f.

virginicum, (7) (O. p. Au. ♃.) flowers with 9 or 12 stamens, distinctly arranged in three parcels, and separated by nectaries: leaves oval, obtuse, clasping: stem compressed. Var. *emarginata*, leaves heart-ovate, emarginate: peduncles axillary, elongated. 1—2 f. *S.*

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(1) kalmianum, Du Roi. (2) virginicum, Wr. (3) punctatum, Lk. maculatum, Wr. (4) quinqueneroium, Wr. mutilum, W. (5) axillare, Mx. Elodea petiolata, Ph. (6) denticulatum, Wr. (7) campanulatum, Wr. Elodea campanulata, Ph.

Southern.

Flowers with 3 styles.

ericoides, W. (1) (E. y. ♄.) branches sub-terete, dichotomous: leaves fascicled, linear, acute, striate: flowers solitary, axillary, sub-sessile: styles united.

fasciculatum, Mx. (2) (E. y. Ju. ♄.) branches 4-angled: leaves crowded, somewhat in verticillate clusters, filiform, linear, obtuse, sessile: peduncles axillary, near the summit of the branches, 1—3-flowered: calyx filiform: styles united. Does this really differ from the galioides? Elliott. 1—2 f.

rosmarinifolium, (3) (O. y. Ju. ♄.) stem terete, somewhat angled: leaves lance-linear, acute, tapering at the base, somewhat clustered: panicle long: peduncles near the summit of the branches, axillary, 3-flowered: styles united. 2—4 f.

ambiguum, E. (E. J. ♄) branches compressed, leaves lance-linear, acute, mucronate: flowers axillary and terminal: leaves of the calyx lance-linear, unequal, as long as the corol: petals toothed near the summit: styles 3, united. 2—4 f.

amoenum, Ph. (E. y. Ju. ♄.) diffuse: branches compressed: leaves oval, glaucous beneath: flowers axillary, sub-solitary: leaves of the calyx ovate, acute: petals deflected, longer than the stamens. 2 f.

fastigiatum, E. (E. J. ♄.) branches somewhat compressed: leaves narrow lanceolate, very acute: corymbs terminal, many flowered, fastigiate: styles united. 3 f.

nudiflorum, Mx. (E. y. Au. ♄.) branches winged: leaves oblong-ovate, obtuse, sessile: panicle terminal, naked, compound: corol larger than the calyx: styles united.

glaucum, Mx. (E. y. Ju. ♄.) branches terete: leaves oblong, cordate, clasping, obtusish, smooth, glaucous, coriaceous: panicle leafy divaricate-dichotomous: divisions of the calyx ovate, acute, longer than the petals: stamens and petals about equal: styles united.

frondosum, Mx. (W. y. Ju. ♄.) branches two-edged: leaves oval-oblong, obtuse, mucronate, narrow at the base: flowers terminal, sub-solitary: divisions of the calyx oblong, acute, equalling the stamens and petals: styles united as long as the stamens.

densiflorum, Ph. (4) (A. y. Ju. ♄.) very branching; branchlets sub-terete: leaves lance-linear, obtusish, narrowed at the base: panicle terminal, compoundly dichotomous, somewhat leafy, dense-flowered: flowers solitary pedicelled: divisions of the calyx very short, ovate, caducous: stamens shorter than the petals and united styles. 2 f.

pilosum, Wr. (E. Ju.) pilose: stem virgate, simple: leaves expanding, ovate, acute, tapering at the base: panicle few-flowered.

simplex, Mx. (E. y. Au. ☼.) erect, woolly; stem simple, terete, virgate: leaves lance-ovate, closely sessile, appressed: panicle terminal, few-flowered. 1—2 f.

acutifolium, E. (E. y.) stem herbaceous? branching, glabrous: leaves narrow-lanceolate, acute: panicle many-flowered: capsules scarcely longer than the calyx.

tubulosum, Wr. (5) (E.) leaves sessile: corol tubular: stamens united above the middle.

triplinerve, Vent. (W. y. Au. 2[.) erect, somewhat branching: stem somewhat two-edged: leaves linear, spreading, 3-nerved: flowers raceme-panicled: corol unequal: acute calix and petals glandular-serrate.

dolabriforme, Vent. (W. y. Ju. 2[.) erect, branching: stem two-edged:

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(1) fasciculatum, Lk. (2) tenuifolium, Ph. (3) fasciculatum, Ph. W. (4) romarinifolium, Lk. (5) Elodea, Ph. &c.

leaves lance-linear, spreading, obtuse: corymb terminal, dichotomous: calyx lanceolate, unequal: petals axe-form.

sphaerocarpum, Mx. (W. y. 2[.) erect, very glabrous: leaves oblong: panicle naked, dichotomous: forks all one-flowered: styles united: capsule globose.

procumbens, Mx. (W. y.) procumbent, very glabrous: branches two-edged, few flowered at the summit: leaves linear, without nerves, spreading: divisions of the calyx lance-oblong, acute: stamens shorter than the corol; styles united. Nigelea.

Hypericum, SAROTHRA.

21—2. HYPNUM. 56. 4.

1. *Leaves two-ranked.*

sylvaticum, branches divided: leaves imbricate, compressed, spread at the apex, lance-ovate, entire, nerveless: lid subulate. Woods.

denticulatum, stems simple: leaves imbricate, compressed, spreading at the apex, lance-ovate, entire, nerveless: lid conic. On trunks and ground in woods.

serrulatum, shoots creeping: branches simple, bearing fruit at the base and middle: lid beaked.

prælongum, stem pinnate, creeping: leaves lance-ovate, acuminate, serrate, 1-nerved, spreading: lid subulate, incurved. (1)

riparium, stem ramose, spreading: leaves lax, lance-ovate, entire, one-nerved: lid convex, slightly mucronate. On stones, &c. in flowing streams.

2. *Leaves imbricate, close-pressed—sometimes a little spreading, part of their length.*

cuspidatum, stem pinnate, sub-erect: branches cuspidate: leaves lance-oblong, nerveless, smooth: lid conic. In ditches and brooks.

illecebrum, stem with scattered, obtuse branches: leaves ovate, ventricose, obtuse, mucronate: obsoletely one-nerved. Woods and meadows.

abietinum, stem pinnate, villose: leaves lance-ovate, entire, one-nerved, 2-furrowed: lid conic. In dry places and among pines, &c.

splendens, stem bipinnate: leaves lance-ovate, almost nerveless, shining, close-pressed: lid subulate, recurved. In woods.

delicatulum, stem decumbent, bipinnate: leaves cordate, with ruptured nerves and two grooves, scabrous: lid beaked.

minutulum, very slender, decumbent, pinnately branched: leaves very minute, oval, acute: margins and keel somewhat scabrous, separately incurved when dry: capsule recurved: lid long beaked.

adnatum, small: branchlets simple: leaves cordate-acuminate, destitute of fascicles: capsules nodding: lids conic.

3. *Leaves imbricate, spreading.*

graminicolor, stem creeping: branches sub-simple, erectish: leaves lax, subalternate, heart-lanceolate, acuminate, sharply serrate, with a nerve somewhat continued: capsules ascending, oblong, unequal; lid round conic.

lætans, stem decumbent: branches short, simple: leaves somewhat lax, heart-ovate, acute, serrulate: peduncles a little scabrous: capsules oblong, slightly inclined: lid conic.

asprellum, stem decumbent, sub-pinnate: leaves remotish, somewhat bifariously imbricate, acuminate, serrulate with sub-continued nerves: capsules oblong, a little curved: lid conic, sub-mucronate.

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(1) This description, taken from Lk. and Dc. is similar to that given in Turton's Linneus of the serrulatum.

lutescens, stem procumbent, ramose; leaves imbricate, lanceolate, acuminate, 3-striate: peduncles a little scabrous: lid conic, acute. On dry earth, walls and rocks.

rutabulum, stem procumbent: branches erect, sub-simple: leaves lance-ovate, acuminate, one-nerved: peduncles scabrous: lid conic. On the earth and trunks.

haldanianum, Greville. (Canada.) stem elongated, creeping, with scattering sub-pinnate branches: leaves imbricate, yellowish, lance-ovate, very entire, without nerves or obscurely 2-nerved at the base: capsule cylindric, arched, erectish-nodding: lid conic, obliquely beaked, closely adherent.

cooleyanum, Sl. (Deerfield.) For description see Addenda.

chrysostomum, procumbent: inordinately branched: leaves laxish, spreading, lance-oval, acuminate, entire, sub-linear: peduncles smoothish: capsules oblong, recurved; lid perfectly conic, with a very acute spinose tip: peristome yellow.

triquetrum, stem sub-erect, ramose: leaves deltoid, acuminate, striate, somewhat nerveless, spreading every way: capsule ovate: lid conic, obtuse.

4. *Leaves imbricate, sub-reflexed or recurved.*

fragile, outer peristome has the teeth lanceolate, remotely tubercled, yellow: inner one is a membrane, extended into an equal number of solid, lance-acuminate, very acute teeth, with ciliae a little less than the teeth, capillary very acute.

stellatum, stem weak, procumbent: leaves ovate, long-acuminate, nerveless, entire, spreading: capsule oblong: lid with an obtuse apex.

squarrosum, stem ascending: leaves keeled, nerveless, ovate at the base, close-pressed, acuminate at the apex, recurved-spreading: capsule ovate: lid short, conic.

5. *Leaves turned to one side, and conical falcate.*

crista-castrensis, stem elongated, somewhat simple, recurvedly and elegantly wing-branched: leaves recurve-curled one-way, subulate, with slender lineate nerves: capsules very long peduncled, oblong, arched: lid conic.

commutatum, stem procumbent, ramose: branches sub-ramose: capsule large, becoming white, striate: peduncles pretty large. In water or mud.

cupressiforme, stem prostrate, sub-ramose: leaves lance-ovate, falcate, nerveless: lid conic.

imponens, very short, somewhat feather-branched, recurved: leaves uncinate, one-way, nerveless: capsule erect, cylindric-oblong: lid conic, obtusely beaked.

torreyanum, Sl. For description see Addenda.

6. *Leaves turned to one side, and not circinal-falcate.*

fluviatile, branches rather long, simple: leaves lance-ovate, laxish, somewhat spreading: capsules oblong, erect-nodding. On rocks under water in rivers, &c.

orthocladon, decumbent, bulbiferous: branches simple: leaves ovate, nerves solid, very entire: lid conic. Flowers monœcious. Calyptre subulate, white. Bulbs in the axils of the leaves or at the apexes of the branches.

7. *Leaves remote, lax-spreading.*

serpens, stem creeping: leaves laxish, small, lanceolate, acuminate, one-nerved at the base: capsule elongated, obconic; lid convex, mucronate. Shades. Fontinalis.

21—1. HYPOPELTIS. 55. 5.

obtusa, W. (Ju. 4.) Described under Aspidium obtusum. Woodsia.

10—1. HYPOPITHYS, N. (1) 18. 51.

lanuginosa, (false beech-drops. E. y-w. Ju. 2f.) scape spike-flowered: whole plant, including the flower, woolly, except the base of the stem. Grows on roots of trees, &c. whole plant yellowish-white. 3—6 i. *S.*

europea, N. (2) (yellow beech drops. y. J. 2f.) scape spike-flowered: flowers and scales on the stem glabrous outside: lateral flowers octandrous. Pterospora.

6—1. HYPOXIS. 10. 17.

erecta, W. (3) (star-grass. O. y. Ju. 2f.) pilose: scape 2 or 3-flowered: leaves lance-linear: divisions of the corol lance-oblong. Var. *graminea*, has longer and narrower leaves; more flowers, longer lance-linear divisions to the corol—and altogether a more grassy appearance. *S.*

Southern.

filifolia, E. (E. Ap.) leaves filiform, somewhat angled, hairy: scape generally 2-flowered.

juncea, S. (E. J. 2f.) pilose: leaves filiform, channelled, very entire: scapes one-flowered. Pontederia.

13—1. HYPTIS. 42. 39.

Southern.

radiata, (E. w. Au. 2f.) heads of flowers opposite: peduncles as long as the internodes: bracts lanceolate, longer than the fruit bearing calix: leaves oblong, serrate. 3—4 f.

capitata, W. (E. w. Ju. 2f.) heads of flowers opposite: peduncles as long as the internodes: bracts lanceolate, shorter than the fruit bearing calyx: leaves oblong, attenuate at each end, unequally serrate. It is doubtful whether this species has been found in this country. Clinopodium.

spicata, Poit. (E. Florida.) spikes terminal; flowers in litile heads, pedicelled, crowded; leaves cordate-ovate, doubly serrate.

13—1. HYSSOPUS. 42. 39.

nepetoides, W. (giant hyssop, g-y. Ju. 2f.) stem acutely 4-angled, sub-alate: leaves ovate, acutely dentate; petioles smooth. 4—8 f. *S.*

scrophularifolius, W. (P. Ju. 2f.) stem obtusely 4-angled: leaves heart-ovate, obtusely dentate; petioles ciliate-pubescent. 3—5 f. Dr. Darlington and Dr. M. Stevenson, have shewn that these are perfectly distinct species.

foeniculum, Ph. (4) W. b. Ju. ☼.) erect pubescent: leaves heart-ovate. toothed, glabrous above, whitish-tomentose beneath: whorles about 6-flowered.

Exotic.

officinalis, (hyssop. Ju. 2f.) flowers whorled: racemes one-way: intermediate division of the corol 2-lobed, entire: leaves lance-linear. Nepeta.

21—6. HYSTERIUM. 58. 1.

pulvicare, gregarious, oblong or oval, striate. On oaks.

fraxini, bursting, black, sub-ovate: lips a little swollen. On the branches of ash and maple.

quercinum, bursting, flexuose, sub-ventricose, soft, dark-cinereous. On the young branches of oaks. Xyloma.

I.

14—1. IBERIS. 39. 63.

Exotic.

umbellata, (candy tuft. w. J. ☼.) leaves lanceolate, acuminate; lower ones serrate, upper ones entire. Coronopus.

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(1) Monotropa, L. (2) hypopithys, L. (3) caroliniensis, Mx. (4) aristatus, N. Stachys, Ph.

4—1. Ictodes. (7) 2. 7.

foetida, Mx. (skunk cabbage, fetid hellebore. O. p. Ap. 2f.) stemless leaves radical, heart-ovate, very large: spadix supporting the flowers in a sub-globose head. Odor resembles that of the skunk. *S.* Camphorosma.

4—4. Ilex. 43. 95.

canadensis, Mx. (1) (mountain holly. A. g-y. M. ♄.) leaves deciduous, ovate, entire or a little serrate at the apex, glabrous: peduncles sub-solitary, long, 1-flowered: fruit somewhat 4-sided. 3—5 f. *S.*

opaca, A. (evergreen holly. E. g-w. M. ♄.) leaves evergreen, ovate, acute, spinose glabrous, flat: flowers scattered at the base of the shoots of the preceding year. A middle sized tree. *S.*

Southern.

laxiflora, Lk. (E. J. ♄.) leaves ovate, sinnate-toothed, spinose, shining, flat: peduncles super-axillary, in the young branches aggregate, lax-ramose.

cassine, A. (E. J. ♄.) leaves lance-ovate, sharply serrate, flat, glabrous on the mid-rib beneath: lateral peduncles corymb-branched. 8—12. f.

dahoon, Wr. (E. w. M. ♄.) leaves lance-oblong, nearly entire, reflexed at the margin, villose on the midrib beneath: peduncles lateral and terminal, corymb-panicled. 4—12 f.

laurifolia, N. (E. Florida.) leaves large, elliptic, acutish, very entire, semi-pervirent: pedicels elongated, sub-3-flowered.

myrtifolia, Wr. (2) (E. W. J. ♄.) leaves lance-linear, mucronate, rigid, very glabrous: fertile flowers solitary. 6—10 f.

ligustrina, E (3) (E. J. ♄.) leaves lance-linear, wedge-form at the base, generally entire: fertile florets solitary. 6—10 f.

vomitoria, A. (4) (O. M. ♄) leaves oval, obtuse at each end, crenate-serrate, glabrous: umbels lateral sub-sessile. 6—15 f.

prinoides, A. (E. M. ♄.) leaves deciduous, lance-oval, acute at each end, serrate: peduncles one-flowered; fertile ones solitary. 6—8 f. Sagina.

Ilex, Mygindа.

Illecebrum, Achyranthes.

12—13. Illicium. 12. 27.

Southern.

parviflorum, Mx. (E. y. M. ♄.) leaves alternate, lanceolate, entire, obtuse, perennial: petals and leaves of the calyx round, concave. 6—10 f.

floridanum, W. (W. p. J. ♄.) leaves acuminate: petals numerous, oblong and linear. Teucrium.

5—1. Impatiens. 24. 73.

pallida, N. (5) (jewel-weed, touch-me-not. O. y. Ju. ☼.) peduncles solitary, 2 & 4-flowered: nectary obtusely conic, dilated, shorter than the petals: spur recurved, very short: flowers sparingly punctate: leaves rhomb-ovate, mucronate-toothed. 2—4 f. *S.*

fulva, N. (6) (speckled jewels. O. y. & r. Ju. ☼.) peduncles solitary, 2-4 flowered: nectary acutely conic, longer than the petals: spur resupinate,

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(1) Nemophanthus fascicularis, R. This species certainly differs much in habit from the opaca, and perhaps it ought to form a new genus. Prof. Dewey of Williams Col. proposes the following description for a new genus, but does not propose any name. Calyx o: petals 4, lanceolate, sub-acute, alternating with the stamens: stigmas sessile: pericarp 4-celled, 1-seeded. Stamens 3 to 5: stigmas 3 to 5. Polygamous. MS. (2) angustifolia, Ph. rosmarinifolia, Lk. M. (3) angustifolia, M. var. ligustrifolia, Ph. (4) cassine, Wr. (5) aurea, M. nolitangere, Ph. (6) maxulata, M. biflora, Ph. (7) Pothos, L. Symplocarpus, Sy. Dracontium, L. in another part of this work.

emarginate, nearly as long as the galea: flowers with crowded spots: leaves rhomb-ovate, mucronate-toothed. 2—4 f. *S.*

Exotic.

balsamina, (balsam weed. r. & w. Au. ☼.) peduncles aggregate, 1-flowered: leaves lanceolate, upper ones alternate: nectary shorter than the flowers. 1—3 f.

Imperatoria, ANGELICA.

16—10. INDIGOFERA. 32. 93.

Exotic.

tinctoria, (indigo. ♄.) leaves pinnate, oblong, glabrous, in four pairs; racemes shorter than the leaves: legume terete, somewhat arched.—From the East Indies.

Southern.

caroliniana, Wr. (E. b. Au. 2ſ.) leaves pinnate; leafets oval and obovate: spikes longer than the leaves: legumes 2-seeded, reticulate-veined. 3—7 f. Glycyrrhiza.

17—2. INULA. 49. 55.

Exotic.

helenium, (elecampane. y. Au. 2ſ.) leaves clasping, ovate, rugose, tomentose beneath: scales of the calyx ovate. Naturalized. 3—5 f. Brachyris.

Inula, CHRYSOPSIS.

5—1. IONIDIUM. 29. 80.

concolor, Fost. (1) (green violet. E. w-g. M. 2ſ.) straight, erect: leaves broad-lanceolate, entire: stipules subulate, entire: peduncles short: petals connivent, emarginate: spur o. 20 i. *S.* Claytonia.

5—1. IPOMEA. 29. 43.

lacunosa, Mx. (w. & p. J. ☼.) glabrous: flowers cordate, acuminate, scrobiculate, angled at the base: peduncles short, about one-flowered: calyx hairy: corol tubular, short: capsules hairy. *S.*

vil, Mx. (2) (morning glory. E. b. Ju. ☼.) hirsute: leaves cordate, 3-lobed: peduncles short, 1—3-flowered: calyx very villose, long acuminate. *S.*

Southern.

quamoclit, W. (jasmine bindweed. E. r. w. Au. ☼.) leaves pinnatifid, linear: flowers sub-solitary; corol tubular.

coccinea, Wr. (y-r. Ju. ☼.) pubescent: leaves cordate acuminate, sub-angled: peduncles about 5-flowered: calyx awned: corol tubular: limb sub-entire.

dissecta, Mx. (E. Ju. 2ſ. ♄?) stem, peteoles, and peduncles very pilose: leaves glabrous, 7-lobed; divisions sinuate: peduncles 1-flowered: divisions of the calyx oval: corol bell-form.

trichocarpa, Mx. (3) (E. p. Ju. ☼.) leaves entire, cordate, or 3-lobed, villose: calyx ciliate: capsules hirsute: peduncles about 2-flowered.

bona nox, W. (E. w. Ju. ☼.) very glabrous: leaves cordate, entire or angled: peduncle 1 to 3-flowered: calyx awned: corol undivided, tube long.

tamnifolia, W. (E. b. Ju. ☼.) hirsute: leaves cordate, acuminate: flowers in aggregate heads, involucred: bracts linear: corol short-tubular; limb spreading: capsule glabrous.

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(1) viola, Fost. Ph. &c. (2) Convolvulus, W. (3) carolina, Ph. W. & Mx.

ciliosa, Mx. (W.) glabrous: leaves *cordate*, sub-ciliate at the margin: peduncles long, 1-flowered: calyx without bracts; divisions broad-oval, obtuse: corol tubular-bell-form.
orbicularis, E. (E. p. Ju.) prostrate: leaves round, emarginate, veined, glabrous: peduncles about 3-flowered: tube of the corol short.
carolina, Cates. (E. b.) leaves digitate; leafets petioled: peduncles 1-flowered. Ophiorhiza.

Ipomea, CONVOLVULUS.

5—1. IPOMERIA. 29. 43.

[The species are described under Cantua, p. 147.] Collomia.

Ipomopsis, IPOMERIA.

20—5. IRESINE. 12. 30.

Southern.

celosioides, W. (E. S. ☼.) leaves punctate, scabrous; lower ones oblong, acuminate; upper ones lance-ovate: panicle branching, crowded: stem furrowed. 3—4 f. Smilax.

3—1. IRIS. 6. 18.

versicolor, (1) (O. b. J. 2f.) leaves ensiform: stem acute on one side: capsules oblong, 3-sided with obtuse angles. Var. *sulcata*, (2) inner petals longer than the stigmas: germ with sulcate angles and concave sides: capsule oblong, ventricose; angles somewhat furrowed. Var. *communis*, (3) stem erect, flexuous: leaves narrow ensiform: inner petals a little shorter than the stigmas: angles of the germ not grooved when young, sides deep-concave: capsule cylindric-oblong. 2—3 f. *S.*
prismatica, Ph. (4) (boston iris. E. b. y. J. 2f.) flowers beardless: leaves linear: stem round, many-flowered: germs triangular, twice grooved on the sides. 1—2 f.
lacustris, N. (Great lakes. b. 2f.) beardless: leaves short ensiform: scape much shorter than the leaf, 1-flowered: petals sub-equal? attenuated on the tube: capsule turbinate, 3-sided, margined: seed roundish, smooth: root tuberous.

Exotic.

plicata, (garden iris. p. w. M. 2f.) bearded: stem many-flowered, higher than the leaves: petals undulate-plicate, erect ones broadest. 18—24 i.
pumila, (dwarf-flower-de-luce. b. M. 2f.) bearded: scape 1-flowered: leaves ensiform, glabrous: tube of the corol exsert: petals oblong, obtuse. 6—10 i.
ochroleuca, (yellow iris. y. M.) beardless: leaves ensiform, depressed, striate: scape sub-terete: germ 6-cornered.

Southern.

cristata, Mx. (E. b. & y. Ap. 2f.) bearded: beard crested: scape generally 1-flowered, as long as the leaves: germs 3-angled: petals about equal. 2—4 i.
tripetala, Wr. (5) (E. b. M. 2f.) beardless: stem terete, longer than the leaves: leaves ensiform: rudiments of the inner petals 3-toothed; middle tooth acuminate: capsule 3-angled. 2 f.
cuprea, Ph. (O. r-y. Ju. 2f.) beardless: stem terete, flexuous, equalling the leaves: leaves broad-ensiform: stigmas linear, short: petals all reflexed, emarginate, obovate; inner ones shortest: capsules large, 6-angled. 3 f.
verna, W. (A. b. M. 2f.) beardless, stemless, one-flowered: leaves very long, grass-like, glaucous: tube very long: petals nearly equal: capsules roundish, sessile. On the earth.

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(1) virginica, Bw. 1st Ed. and probably of L. (2) versicolor W. virginica, Ph. (3) versicolor, Ph. (4) gracilis, Bw. 1st Ed. virginica, T. (5) tridentata, Ph.

sibirica, W. (W. b. Ju. 2f.) beardless: stem hollow, terete, higher than the leaves, somewhat 3-flowered: leaves linear: capsules short-3-angled, obtuse at each end. Dilatris.

12—1. Isanthus. 42. 39.

cæruleus, Mx. (1) (blue gentian, false pennyroyal. O. b. Ju. ☼.) viscid-hairy: leaves lance-oval, acute at both ends, 3-nerved: peduncles 1 or 2-flowered Hedeoma.

21—6. Isaria. 58. 1.

mucida, cespitose, effuse: branchlets sub-depressed, forked, nearly soft. On decaying wood in summer and autumn. Monila.

14—1. Isatis. 39. 63.

Exotic.

tinctoria, (woad. J. ♂.) radical leaves crenate; cauline ones sagitate, oblong. Iberis.

21—5. Isidium. 57. 2.

corallinum, Ach. (coral lichen.) crust white, verrucose: receptacle only visible to the microscope. On rocks.

phymatodes, Ach. crust green. Rotten wood in moist places. Stereocaulon.

4—1. Isnardia. (2) 17. 88.

palustris, W. (water purslane. O. g. J. 2f.) prostrate, creeping: leaves opposite, lanceolate, tapering at the base: capsule oblong, sub-angled.

Southern.

alata, E. (E. Ju.) glabrous: leaves wedge-lanceolate, decurrent: stem winged: capsule cubic, sessile. 2 f.

microcarpa, Mx. (3) (E. Au. ☼?) stem decumbent, slightly winged: leaves alternate, spatulate-obovate: flowers axillary, sessile. 1 f.

sphaerocarpa, E. (E. Au. 2f.) stem erect, branching: leaves lance-linear: capsules small, sessile, globose, pubescent. 2 f.

cylindrica, E. (E. Au. 2f.) stem erect, branching, slightly angled: leaves lanceolate: capsules cylindrical. 3 f.

lanceolata, E. (E. Ju. 2f.) stem virgate: leaves narrow, lanceolate, glabrous, sub-decurrent: capsules cubic, sessile, winged. Elaeagnus.

21—1. Isoetes. 55. 5.

lacustris, W. (quill-wort. E. 2f.) frond dilated and imbricate at the base, narrow and subulate above, flat: root fibrous. From 2 to 12 inches high: colour green: growing immersed, or at the margin of ponds. Resembles a zoophyte. Azolla.

5—1. Itea. 18. 50.

virginica, W. (itea. w. J. ♄.) leaves alternate, lanceolate, acuminate, serrulate, pubescent on the veins. 3—6 f. *S.* Impatiens.

17—4. Iva. 49. 55.

frutescens, (high-water shrub. L. g. Au. ♄.) leaves lanceolate, punctate-scabrous, deeply serrate: glomerules of florets globose, depressed. Somewhat shrubby. 3—4 f. *S.*

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(1) Trichostema brachiata, L. (2) Ludwigia, E. Ph. &c. (3) glandulosa, Ph.

Southern.

imbricata, Wr. (L. Au. ♄.) shrubby, glabrous: leaves lance-linear, wedge-form, entire, glabrous: calyx imbricate.

xanthifolia, N. (W. Au. ☼.) leaves opposite, petioled, heart-ovate, acuminate, doubly serrate, soft-villous, hoary beneath: spikes naked, panicled. 5—6 f.

axillaris, Ph. (W. y-g. M. 2ℓ.) herbaceous, sub-pilose, leaves generally opposite, lance-linear, entire: flowers axillary, solitary, nodding: calyx nearly simple; leafets ovate. 6—8 i.

ciliata, Ph. (W. Ju. ☼.) herbaceous: leaves lance-ovate, sub-serrate: spike somewhat crowded: bracts lanceolate, acuminate: bracts and petioles long-ciliate. 2 f. Calendula.

3—1. IXIA. 6. 18.

Exotic.

chinensis, (blackberry lily. y. r. J. 2ℓ.) corol about 6-petalled: stem flexuose: leaves ensiform.

Southern.

coelestina, Bart. (O. b. M. 2ℓ.) leaves linear-subulate, many times shorter than the 1-flowered scape. Commelina.

J.

2—1. JASMINUM. 44. 37.

Exotic.

fruticans, (jasmine. y. ♄.) leaves alternate, ternate, simple: leafets obovate, wedge-form, obtuse: branches angled.

officinale, (jasmine. w. ♄.) leaves pinnate, opposite: leafets acuminate. Syringa.

19—15. JATROPHA. 38. 96.

Southern.

stimulosa, Mx. (O. w. Ju. 2ℓ.) hispid, with stimulating prickles: leaves palmate-lobed: lobes obtusish, sub-sinuate-toothed: cymes short-peduncled. 6—18 i. Stillingia.

8—1. JEFFERSONIA. 27. 62.

diphylla, B. (1) (twin-leaf. W. w. M. 2ℓ.) stemless: peduncles naked, 1-flowered: leaves in pairs. Erica.

19—12. JUGLANS. 50. 94.

nigra, (black walnut. O. M. ♄.) leafets numerous, lanceovate, serrate, sub-cordate, narrowed above: petioles and under-sides of the leaves sub-pubescent: fruit globose, with scabrous punctures: nut wrinkled.

cinerea, (butternut. O. M. ♄.) leafets numerous, lanceolate, serrate, rounded at the base, soft-pubescent beneath: petioles villose: fruit oblong-ovate, viscid. long-peduncled: nut roughly sculptured. The bark is a cathartic.

Exotic.

regia, (madeira nut. M. ♄.) leafets about 9, oval, glabrous, sub-serrate, sub-equal: fruit globose. Var. *fraxinifolia*, has 9 or 10 leafets, oblong, serate.

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(1) Podophyllum, L.

smooth; lateral lower one adnate on the common petiole. It is said that this variety is indigenous to North America. Carya.

Juglans, CARYA.

6—1. JUNCUS. 5. 13.

1. *Scapes naked: flowers lateral.*

effusus, (E. 2f.) scape minutely striate, (soft:) panicle loose, very branching: spreading: leafets of the calyx lanceolate, acuminate, rather longer than the obovate, obtuse capsule. 2—3 f. *S.*

setaceus, Rostk. (E. 2f.) scape filiform, striate: umbel lateral, compound, few-flowered: peduncles many-flowered: leafets of the calyx subulate. 2 f. *S.*

acutus, (O. 2f.) scape naked, terete: panicle lateral: involucre 2-leaved, spinous: capsule roundish, mucronate, twice as long as the calyx. 2—3 f. *S.*

2. *Leaves all radical: flowers terminal.*

squarrosus, (2f.) leaves setaceous, (rigid) grooved: panicle terminal, elongated, compound: capsules elliptical.

tenuis, W. (E. 2f.) stem erect, filiform, somewhat dichotomous at the summit, nearly terete: leaves setaceous, channelled: flowers solitary, approximate, sub-sessile: calyx longer than the obtuse capsule. 1 f. *S.*

nodosus, (Ju. 2f.) stem somewhat leafy: leaves nodose-articulate: heads about 2, globose; one of them lateral and peduncled; the other sessile: leafets of the calyx mucronate, shorter than the acuminate capsule. 8—10 i. *S.*

3. *Stems leafy.*

(Leaves nearly plane, grooved above.)

marginatus, Rostk. (1) (Au. 2f.) leaves flat, smooth: corymb terminal, simple, proliferous: heads 5—10-flowered: flowers triandrous: leafets of the calyx about as long as the obtuse capsule; outer ones and bracts somewhat awned. Var. *odoratus*, stem tall, subterete, leafy: panicle very branching, proliferous. 12—18 i. *S.*

trifidus, (A.) sheaths ciliate; those at the base of the stem leafless: bracts leafy, very long, grooved: heads about 3-flowered, terminal: stem 1-leaved. 6 i.

bulbosus, (2) (E. Au. 2f.) stem simple, leafy, compressed: leaves linear-setaceous, channelled: panicle terminal, compound, sub-cymose, shorter than the involucre: leafets of the calyx incurved, obtuse or acute, generally shorter than the ovate, sub-globose capsule.

bufonius, (E. Ju. ☼.) stem dichotomous above, panicled: leaves filiform-setaceous, channelled: flowers sub-solitary, sessile, 1-sided: leaves of the calyx very acuminate, much longer than the oval-ovate capsule. 3—6 i. *S.*

(Leaves rounded or sub-compressed, nodose-articulate.)

acuminatus, Mx. (E. Au. 2f.) stem leafy, erect: leaves terete, nodose-articulate: panicle terminal, compound: heads 3—6-flowered, peduncled and sessile: leafets of the calyx lance-linear, somewhat awned, shorter than the acute capsule. 18 i. *S.*

polycephalus, Mx. (3) (E. Au. 2f.) stem leafy, erect: leaves compressed, nodose-articulate: panicle decompound: heads globose, many-flowered: flowers triandrous: leafets of the calyx somewhat awned, rather shorter than the triangular, acute capsule. 18—24 i. *S.*

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(1) aristulatus, Mx. E. (2) dichotomus, E. (3) var. crassifolius, E. Ph. Bor.

subverticillatus, W? (1) (2ℓ.) cauline leaves subulate, nodose-articulate: panicle corymbed: heads about 5-flowered, fasciculate-whorled: leafets of the calyx striate, as long as the obtuse capsule. 18 i.

militaris, Bw. (E.) leaf one, jointed, cylindrical, longer than the stem: panicle terminal, proliferous: heads about 5-flowered: leafets of the calyx acute. 2—3 f.

Southern.

conglomeratus, S. (Ju. 2ℓ.) stem naked, straight: panicle lateral, conglobate: capsule retuse: flowers triandrous.

repens, Mx. (E. J. 2ℓ.) creeping: stem geniculate, branching: leaves linear, flat: fascicles lateral and terminal: flowers triandrous: leaves of the calyx subulate, carinate, very acute. 6—10 i.

biflorus, E. (E. J. 2ℓ.) stem terete: leaves linear, flat: panicle decompound, long: fascicles 2-flowered. 3 f. Luzula.

21—3. JUNGERMANNIA. 57. 3.

I. *Caulescent.* A. *Having stipules.*

1. *Stipules in three rows.*

platyphylla, L. stem procumbent, bipinnate; leaves 2-ranked, imbricate, roundish, obtuse: stipules entire, in threes. On bark of living trees.

platyphylloidea, Sz. stem procumbent, bi- or tri-pinnate: leaves imbricate, vaulted, roundish-4-sided: stipules in threes, sub-equal, entire. Yellowish-green, tinged with brown. On rocks.

distans, Sz. stem diffused, branching, simply pinnate; wings lax: leaves not imbricate, sub-distant, alternate: stipules minute, round, entire, distant. 3 i. In dense tufts, on roots of trees; and on wet rocks. Dark green.

porella, Dick. stem floating, irregularly branched and pinnate: leaves subimbricate, largish, oval, obtuse: stipules entire: broad leaves blackish-blue. In brooks.

2. *Stipules in a simple series.*

a. *Leaves eared below.*

tamariscifolia, Schm. (2) stem creeping, pinnate: leaves two-ranked, obtuse, very entire; ears vaulted: stipules minute, very entire, two-cleft: calyx 3-cornered, 3-cleft, papillose. On trees and rocks: often dark brown-purple.

dilatata, Weber. (3) stems entwined, creeping, sub-pinnate: leaves 2-ranked, obtuse, entire; lobes of the ears alternately clavate, and alternately very small or none: stipules large, 2-cleft, serrate, especially that of the calyx: calyx 3-cornered, 3-cleft, smooth. On trees. A green variety, occurs in large tufts on rocks. Colour varies, often blackish.

serpyllifolia, Dick. stems creeping, filiform, irregularly pinnate, shortish: leaves imbricate, eared; lobes unequal; upper ones largest, ventricose beneath at the base; lower ones minute: stipules round, acutely and deeply bifid. Green. Among mosses on wet rocks.

b. *Leaves not eared.*

*. *Leaves entire.*

†. *Stipules 2-cleft or 2-lobed.*

pallescens, Eh. stem ascending, somewhat branched: leaves roundish, very entire, obtuse: stipules obtuse, 2-cleft; segments acute, evanescent. Wet or water.

trichomanes, Dick. leaves imbricate, roundish, very entire: stipules roundish, with two obtuse lobes. In woods, on moist earth.

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(1) fluitans, Mx. verticillatus, Ph. (2) dilatata, of many authors. (3) tamariscifolia, of many authors.

††. *Stipules entire.*

transversalis, Sw. stem creeping, sub-ramose: leaves imbricate, obliquely ovate, obtuse, complicate beneath at the base: stipules sub-orbicular-reniform, inflexed at the margin, very entire. Yellow. On rocks, rarely on trees.

clypeata, Sz. stem creeping, sub-pinnate, many interwoven: leaves imbricate, vaulted, (so that the semi-cylindric sprouts pass out,) 2-ranked, obliquely ovate, round, interwoven beneath at the base: stipules orbicular, affixed in the middle like a shield. Whitish-yellow. Growing downwards on trees and rocks.

**. *Leaves divided.*

†. *Leaves emarginate or two-toothed.*

bidentata, L. stem decumbent, ascending and sub-ramose at the apex: leaves with two acuminate teeth: stipules ovate, 4-cleft. Earth.

††. *Leaves with three or four small teeth.*

trilobata, Web. leaves obliquely ovate, retuse, unequally 3-toothed at the apex, and entire in the other parts: stipules 2—4-cleft; shoots from the axils of the stipules.

tridenticulata, stem procumbent-creeping, many aggregated: leaves flat, two-ranked, largish, 3-toothed at the apex, sub-oval: stipules broad, roundish, denticulate on all sides; shoots from the axils. Yellow. A variety, growing on trees, is dichotomous, dark brown, and smaller. In bogs.

reptans, L. leaves remotish, sub-4-sided, nearly equally 3—4-cleft at the apex: stipules similar to the leaves, 4-cleft. Stem pinnate.

sertularioides, Mx. creeping, capillary: leaves bristle-form, 2-parted; bristles jointed: teeth of the calyx bristle-bearing.

laciniosa, Mx. creeping, very branching: leaves 2-cleft, with fringed divisions: calyxes lateral, oblong, a little glabrous: bristles short: stipules like the leaves.

pulcherrima, L. (Labrador.) stem erect, bi-pinnate; branches vaulted at the apex, incrassate: leaves 3-cleft: stipules 2-cleft, very long ciliate. Earth.

ciliaris, L. stem sub-pinnate, decumbent: branches slender: stipules and leaves split, having ciliæ rather long. Smaller and lighter coloured than the preceeding. Rotten logs.

tomentella, Eh. stem ascending, bipinnate, tomentose above: leaves and stipules 4-parted, having ciliae very long, becoming white.

pancifiora, Dick. (Labrador.) stem branched, creeping: leaves and stipules similar, erectly spreading, 3-parted, even to the base; divisions hooked.

B. *Without stipules.*

1. *Leaves eared.*

complanata, L. stem branched, creeping: leaves roundish, very entire; ears sub-ovate, flattish. On smooth bark: very rarely on rocks.

2. *Leaves not eared.*

a. *Leaves not divided.*

*. *Leaves very entire.*

viticulosa, L. stem naked (excepting the radicled) ascending: leaves distant, sub-verticillate, a little convex, roundish, beautifully green. Rotten logs.

polyanthos, L. stem creeping, rooting on the back: leaves sub-imbricate, sub-verticillate, a little convex, roundish, pale: calyx shorter than the bristle, divided. Moist ground.

lanceolata, L. stem creeping, rooting on the back: leaves imbricate, semi-verticillate, sub-convex, roundish-ovate. Reddish. On rocks and earth, in woods.

scalaris, Schm. stem creeping, rooting: leaves sub-imbricate, semi-verticillate, convex, roundish, somewhat converging forwards. Old logs: handsomely twisted: light-green and purplish.

sphagni, Dick. stem creeping, with radicles on the back: leaves imbricate, sub-vertical, concave, roundish, converging forward.

orbicularis, Mx. small, with a creeping stem: leaves orbicular, entire, rising vertically in a double series. Reddish. On dry side-hills: and, perhaps, in woods among mosses.

****. *Leaves toothed.***

asplenioides, L. leaves sub-imbricate, semi-verticillate, oblique, ovate, roundish, having small teeth. Among rocks, on the ground.

b. *Leaves divided.*

. *Leaves emarginate, 2-lobed or 2-cleft.

†. *Margin of the leaves very entire.*

emarginata, Eh. stem erect, sub-ramose: leaves approximate, spread-diverging, obcordate, obtusely emarginate, angles obtuse. Moist rocks.

funckii, Web. stem ascending, sub-simple: leaves sub-imbricate, spreading, sub-horizontal, emarginate, angles obtusish. Deep red. Among lichens in dry woods.

inflata, Huds. stem procumbent, sub-simple: leaves remotish, spread-diverging, sub-horizontal, concave, acutely emarginate, angles acute. With the last.

curvifolia, Dick. stem procumbent, branching: leaves sub-imbricate, erectish, 2-cleft, divisions alternated, incurved. Rotten logs.

michauxii, Web.? shoots erectish: leaves 2-cleft, approximate, sub-imbricate, spread-diverging, very entire, acutely emarginate, angles acute: fructification terminal: calyx tubular, plaited at the apex.

bicornis, Mueller. stem creeping, sub-ramose: leaves remote, spreading, semi-verticillate, concave, emarginate-2-toothed, teeth acuminate, very acute, converging.

bicuspidata, L. stem flexuose, sub-ramose, creeping: leaves remote, spread-diverging, semi-vertical, flattish, acutely emarginate-2-toothed; teeth diverging.

connivens, Dk. shoots creeping; branches simply pinnate: leaves ovate, emarginate-2-cleft; teeth acute, converging.

ehrhartiana, Web. stem short, decumbent, rooting on the back: leaves imbricate, somewhat spreading, concave, obtusely emarginate, angles acutish.

††. *Margin of the leaves toothed, serrate, or crenate.*

undulata, L. stem erect, simple: leaves roundish obtuse, sub-denticulate, undulate, lobes obtuse: a little concave in front, convex behind. Bogs. Smaller than the next: leaves less ciliate.

nemorosa, L. stem erect, sub-ramose: leaves with roundish lobes, tooth-ciliate. Whitish-green. Large. A variety almost white, more ciliate: fructification nearly sessile. Possibly a distinct species.

resupinata, L. stem erectish, sub-branched: leaves resupinate; lobes sub-ovate, scarcely acute, denticulate. Reddish. Dry earth; leaves obtuse.

umbrosa, Schrader, lobes of the leaves sub-ovate, acute or acuminate, serrate. Reddish. Dry earth: leaves acute.

albicans, L. stem erect, subdivided: lobes of the leaf oblong, acutish, furnished with a nerve, serrate at the apex. Whitish-yellow: in tufts on the earth.

*****. *Leaves unequally 3-toothed, or 3—4—5-cleft at the apex.***

pusilla, L. small, creeping: leaves sub-4-sided, plaited, margin in front obtuse, crenate, very entire on the other parts. Light green. On loamy ground.

quinquedentata, L. stem erectish, rooting on the back: leaves plaited, 4-sided, querciferm below: apex with 3 or 5 acute, very entire teeth.

exsecta, Schm. stem creeping: leaves concave, unequally 3-toothed; teeth acutish, very entire. On earth, in moist woods.

incisa, Schr. stem rooting, sub-simple: leaves unequally 3-cleft; divisions channeled on the back, toothed. Moist rocks.

decipiens, Hooker. stem erect, flexuose, sub-simple: lower leaves smaller, very entire; upper ones sub-4-sided, with one or more spinose, scattered teeth.

II. *Stemless.*

sinuata, Sw. nearly stemless, frond sub-dichotomous, flat, nerved, margin undivided or sinuate-pinnatifid, very entire, glabrous. A large species. Bogs.

epiphylla, L. frond obovate, lobed, nearly nerveless; lobes sinuate, margin undulate, fruit-bearing above. Banks of brooks.

pinguis, L. frond obovate, lobed, nerveless, glabrous, fleshy; lobes sinuate: fruit-bearing below. Wet and water.

multifida, L. frond creeping, bi-pinnatifid, nerveless; divisions narrow, broader at the apex. Wet.

palmata, H. frond short, somewhat ascending, digitate-palmate, nerveless. Dark green. Rotten wood, in wet places.

bipinnata, Sw. frond procumbent, bi-pinnate, nerveless; segments, towards the apex, attenuated. Shady rocks, among mosses. Small.

furcata, frond linear, decumbent, ramose, forked at the extremity, nerved, the margin at the bottom and on the back of the nerve pubescent, yellowish green. On rocks and stones.

pubescens, Schr. frond linear, branching, forked at the extremity, nerved, all over pubescent. Yellow. On mountains.

ciliifera, Sz. frond linear, very narrow, branching; not forked at the extremity, but sub-bifid; divisions attenuated, nearly nerveless; leafy at the margin: lobes spatulate, clavate and irregular, sometimes shoot like, with intermixed ciliae. Elegant. Green or yellow. In dense tufts on rocks and earth.

oblonga, Sz. frond simple, broad, not lobed, oblong, sub-acuminate; margin undulate, or thick towards the nerves, plaited; on other parts very entire; the apex is sometimes produced into a long linear point. Frond one-eighth of an inch in diameter. In water.

Remark. Most of the Jurgermanniae are in fruit late in the spring; some however, in the winter. Fucus.

20—15. JUNIPERUS. 51. 100.

communis, W. (juniper. O. M. ♄.) leaves in threes, spreading, mucronate, longer than the berry. Var. *erecta*, branches erect. Var. *depressa*, (1) branches prostrate or horizontal.

virginiana, Wm. (red cedar. O. M. ♄.) leaves in threes, adnate at their bases; in their young state they are imbricate, older they become spreading. Hardly a middle-sized tree.

sabina, W. (savin. M. ♄.) leaves opposite, obtuse, glandular in the middle, imbricate 4-ways; the young tender ones opposite, acute. Grows near Lake Superior, Pitcher. Var. *procumbens*, 6 inches high, in Rocky Mountains, Ph.

Southern.

excelsa, W. (M. ♄.) leaves opposite, obtusish, glandular in the middle, imbricate 4-ways; the young tender ones acute, in threes, spreading: stem arboreus. A middle size tree. Perhaps a variety of the last.

barbadensis, W. (E. ♄.) leaves all imbricate four-ways; younger ones ovate; older ones acute. Taxus.

10—1. JUSSIEUA. 17. 88.

Southern.

grandiflora, Mx. (E. y. Ju. 2ℓ.) creeping: stem erect and ascending: leaves

(1) repens, N. prostrata, M.

lanceolate, entire, with the peduncles and calyx villous : flowers decandrous. 2—3 f.

erecta, W. (E. y. Au. 2f.) erect, glabrous : leaves lanceolate : flowers octandrous, sessile.

subacaulis, Ph. (W. y. J. 2f.) creeping, glabrous : leaves lance-linear, repand-toothed : flowers solitary, octandrous, peduncled : alternate filaments shortest : petals obovate.

leptocarpa, N. (W. y. ☼.) erect : stem and calyx somewhat hirsute : leaves lanceolate, attenuate at each end : flowers sessile : capsule slender, cylindric.

tennifolia, N. (E. Florida.) leaves sessile, linear, glabrous : flowers sessile, octandrous. Prosopis.

2—1. JUSTICIA. 40. 36.

pedunculosa, Vahl. (1) (water willow. W. Ju. ♄.) spikes axillary : flowers crowded : peduncles elongated, alternate : leaves lanceolate. *S.*

Exotic.

adhatoda, (malabar nut. p. ♄.) leaves lance-ovate : bracts ovate, nerved, permanent : helmet of the corol concave.

Southern.

humilis, Vahl. (E. Ju. 2f.) spikes axillary and terminal, few-flowered : flowers distant : bracts linear : leaves lance-oblong.

brachiata, Ph. (O. r. Ju. 2f.) peduncles axillary in whorled racemes : pedicels in pairs : bracts obovate, 3-flowered : leaves ovate, acute : petioles very long : stem six-angled, very branching. Utricularia.

K.

10—1. KALMIA. 18. 50.

latifolia, W. (laurel. E. w. & r. Ju. ♄.) leaves long-petioled, scattered, and in threes, oval, smooth both sides : corymbs terminal, with viscid hairs. 3—20 f. *S.*

angustifolia, (sheep laurel. O. J. ♄.) leaves in threes, petioled, oblong, obtuse, sometimes rusty beneath : corymbs lateral : bracts linear : peduncles and calyx with glandular hairs. Var. *ovata*, taller : leaves broader, subovate. 2—3 f. *S.*

glauca, A. (2) (swamp laurel. O. r. M. ♄.) branchlets 2-edged : leaves opposite, sub-sessile, oblong, smooth, glaucous beneath, margin revolute : corymb terminal, bracted : peduncles and calyxes very glabrous. Var. *rosmarinifolia*, leaves linear, green beneath. 18—24 i.

Southern.

cuneata, Mx. (A. w. r. ♄.) leaves scattered, sessile, wedge-form, oblong, pubescent beneath, slightly awned at the apex : corymbs lateral, few-flowered.

hirsuta, Wr. (E. r. Ju. ♄.) branches, leaves and calyx hirsute : leaves opposite and alternate, sub-sessile, lanceolate : peduncles axillary, solitary, one-flowered, longer than the leaves. 10—18 i. Rhododendron.

5—2. KOCHIA. 12. 24.

Southern.

dentata, W. (3) (W. J. ☼.) leaves lanceolate, sinuate-toothed : stem erect, very branching.

divica, N. (W. M. ☼.) low : branching axillary : leaves sessile, very entire, lance-ovate, acute, glaucous, somewhat succulent : staminate flowers terminal, conglomerate. Both species resemble Chenopodium. 6—12 i. Planera.

(1) Dianthera americana, L. ensiformis, Wr. (2) polifolia, Wm. (3) Salsola platyphylla, Mx.

3—2. KOELERIA. 4. 10.

pensylvanica, Sl. (0) (J. 2[.) leaves flat and with the sheaths, soft-pubescent: panicle oblong, slender, rather loose: calyx 2-flowered: glumes nearly equal; lower one oblong, obtuse, sub-mucronate: upper valve of the corol scabrous. 2 f.

truncata, M. (1) (J. 2[.) leaves flat, smooth: panicle oblong, racemed: calyx 2-flowered with a third abortive floret, unequal; lower glume a little scabrous, obtuse: corol glabrous. 2 f. Var. *major*, T. (E.) panicle large, a little spreading: leaves broad-linear, very long. 3 f. *S.*

Southern.

nitida, N. (W. ☼?) spike elongated, lobed; lobes crowded, appressed, approximate: spikelets oblong-ovate, smooth, awnless; lower ones 2-flowered; upper ones 3, both with an additional setaceous rudiment: stipule hairy. 3 i.

paniculata, N. (E.) panicle oblong, smooth: spikelets 2—3-flowered, shining: glumes awnless: valves of the calyx very unequal; largest one obtusely truncate.

cristata, S. (2) (W. Ju. 2[.) spike somewhat lax: spikelets diverging, 3—4-flowered, somewhat awned and wrinkled, sub-ciliate on the keel. Uralepsis.

4—1. KRAMERIA. 33. 35.

Southern.

lanceolata, T. & J. (W. y. ♄.) hoary-pubescent: leaves lanceolate, acute, villose: pedicels axillary, about twice as long as the leaves. Rivina.

17—1. KRIGIA. 49. 53.

virginica, Mx. (3) (dwarf dandelion. E. y. M. ☼.) small: leaves lyrate, glaucous, smoothish, ciliate: scape 1-flowered, becoming elongated after flowering: calyx about 8-leaved. Var. *dichotoma*, caulescent, dichotomous. 4—8 i. *S.*

amplexicaulis, Mx. (4) (O. y. Ju. 2[.) glaucous: radical leaves spatulate, lanceolate and oval, toothed: scape somewhat leafy and branched. 12—14 i. *S.*

Southern.

caroliniana, Wr. (5) (E. Ap. y. 2[.) leaves runcinate, nearly glabrous: scapes very long, with the base of the calyx glandular-hairy. 6—12 i.

dandelion, (6) (E. y. 2[.) glabrous: slightly glaucous: leaves lance-linear, entire, smooth: scape one-flowered. 8—18 i.

montana, Mx. (7) (A.) very glabrous, procumbent: leaves lanceolate, entire: scape 1-flowered. Tragopogon.

17—1. KUHNIA. 49. 55.

eupatorioides, W. (8) (false boneset. E. w. Au. 2[.) glabrous: leaves petioled, broad-lanceolate, serrate: corymbs terminal, few-flowered, compact. 2—3 f. *S.*

critonia, W. (9) (y. Au. 2[.) pubescent: leaves narrow-lanceolate, about 2-toothed below, petioled, punctate beneath: upper ones linear, entire, sessile: panicle terminal, spreading. 3 f. *S.* Eupatorium.

glutinosa, E. (W. w. S.) pubescent, glutinous: leaves lanceolate, tapering towards the summit, notched and toothed, crowded: flowers corym-panicled. 2 f.

3—1. KYLLINGIA. 3. 9.

monocephala, (false bog-rush. E. 2[.) culm filiform, 3-sided, with a leafy base: heads globose, sessile: involucres 3-leaved, very long.

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(1) Aira, M. triflora, E. (2) Aira, L. (3) Hyoseris, Mx. (4) Troximon, Ph. Hyoseris, Mx. (5) Hyoseris, Wr. (6) Hyoseris angustifolia, Ph. Tragopogon, L. (7) Hyoseris, Mx. (8) Eupatorium alternifolium, L. (9) Critonia kuhnia, Mx. (0) Aira, Sl. M.

Southern.

pumila, Mx. (E. J. 2ℓ.) head globose, sessile, solitary : involucre short (long E :) culm setaceous : flowers diandrous. 3—6 i.

maculata, Mx. (E. Ju. 2ℓ.) calyx 1-leared, imbricate : corol 2-valved ; valves unequal : heads about 3, ovate, sub-acute, sessile. 3—5 i.

L.

Lachnanthes, DILATRIS.

17—1. LACTUCA. 49. 53.

elongata, M. (1) (wild lettuce. O. y. J. ♂. or 2ℓ.) leaves smooth beneath, lower ones runcinate, entire, clasping ; lowest ones toothed, highest ones lanceolate : flowers corymb-panicled. 3—6 f. *S.*

hirsuta, M. (y. Au. 2ℓ.) lower part of the stem and leaves hairy : radical leaves lyrate ; segments truncate, sub-dentate ; upper ones partly runcinate-pinnatifid : flowers racemed.

integrifolia, Bw. (O. y. Ju. ♂.) leaves sagittate, entire, unarmed, clasping, pale beneath, midrib smooth ; lower ones a little eroded : flowers panicled. 3—4 f. *S.*

sanguinea, Bw. (E. r. Au. ♂?) leaves clasping, glaucous beneath, runcinate, with the midrib filamentous : flowers panicled. 2—3 f.

Exotic.

sativa, (lettuce. y. Ju. ☼.) leaves roundish ; cauline ones cordate : stem corymbed. Var. *romana*, has oblong, straight leaves, narrowed at the base. Var. *crispa*, has sinuate-crenate leaves, toothed, undulated, crisped ; radical ones hairy on the keel. Var. *laciniata*, has the lower leaves pinnatifid, and the upper ones runcinate.

Southern.

graminifolia, Mx. (E. p. Ju.) stem erect, simple : leaves unarmed, generally undivided, simple at the base, long-linear : panicle leafless, loose ; branches few-flowered : flowers all peduncled. 3 f.

sagittifolia, E. (E. y? Au.) stem erect, glabrous : leaves lance-oblong, acute, entire, glabrous, pale beneath, close-sessile, sagittate at the base : flowers panicled. Sonchus.

21—4. LAMANIA. 57. 2.

fluviatilis, threads sub-simple, olive-colour ; papillae sub-ternate, internodes cylindric, the length 5 times the diameter. In rivers. Conferva.

21—4. LAMINARIA. 57. 2.

esculenta, frond ribbed : stipe pinnate, with petioled wedge-form leaves, running through a sub-coriaceous ensiform frond. Colour olive, becoming sooty-yellow when dry. On the sea-shore.

saccharina, frond not ribbed, coriaceous : stipe flattened into a nerveless, ensiform, entire frond, ovate at the base. Colour olive. On the sea-shore. Delesseria.

13—1. LAMIUM. 42. 39.

amplexicaule, (hen-bit, dead nettle. O. p. M. ☼.) floral leaves sessile, clasping, obtuse : radical leaves petioled. 6—10 i. *S.*

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(1) longifolia, Mx.

purpureum, (p. ☼.) leaves cordate, obtuse, toothed, petioled, crowded at the top: stem nakedish downwards..

Exotic.

garganicum, (dead nettle. 2f.) leaves cordate, concave: throat of the corol inflated, tube short.

Southern.

hispidulum, Mx. (W. w.) stem hispid: leaves long-petioled, broad-cordate, pubescent: axils 1-flowered. Galeopsis.

13—2. LANTANA. 40. 35.

Southern.

camara, (E. y. Au. ♄.) leaves opposite, lance-ovate, crenate and serrate, scabrous: stem rough, not prickly: flowers in umbellate heads, leafless. 2—4 f. Orthocarpus.

21—2. LASIA. 56. 4.

trichomitrion, branch compressed: leaves oval, acuminate, striate longitudinally: peduncle of the length of the calyx: capsule ovate: calyptre profusely hairy. In mountains.

marginata, in very branching fascicles: branchlets erect, tapering, filiform: leaves oval, acuminate, revolute both sides so as to appear as if margined: nerves prominent: capsule oblong; lid subulate. Leucodon.

16—10. LATHYRUS. 32. 93.

palustris, (O. w-p. Ju. 2f.) stem winged: stipules lance-semi-sagittate: leafets six, lance-linear, acute: peduncles about 3-flowered.

myrtifolius, W. (1) (O. r. Ju. 2f.) stem naked, winged, 4-cornered: stipules semi-sagittate, lance-ovate, acuminate: leafets 4, lance-oblong, acute, mucronate, net-veined: peduncles longer than the leaves, about 4 or 5-flowered.

venosus, W. (W. p. Ju. 2f.) stem naked, 4-cornered: stipules semi-sagittate, ovate, acuminate: leafets numerous, somewhat alternate, ovate, obtuse, mucronate, veiny: peduncles shorter than the leaves, 5—10-flowered.

maritimus, Bw. (2) (E. p. Ju. 2f.) stem compressed, 4-angled: stipules sagittate: leafets numerous, sub-alternate, obovate: peduncles shorter than the leaves, about 7-flowered.

Exotic.

odoratus, (sweet pea. J. ☼.) peduncles 2-flowered: tendril with 2 ovate oblong leafets: legumes hirsute.

latifolius, (everlasting pea. Au. 2f.) peduncles many-flowered: tendril with 2 lance-ovate leaves; membranaceous between joints.

clymenum, (various pea. ☼.) peduncles 2-flowered: tendril with many lanceolate leafets: stipules toothed.

articulatus, (jointed pea. Ju. ☼.) peduncles about 1-flowered: tendril with many alternate lanceolate leafets: legume jointed.

sativus, (chick vetch. ☼.) peduncles 1-flowered: tendrils with 2 and 4 leafets, legumes ovate, compressed, with two narrow wings on the back.

Southern.

pusillus, E. (E. p. M.) peduncles long, 1-flowered: stipules falcate: tendril 2-leaved, simple: leaves lance-linear: stem winged.

decaphyllus, Ph. (3) (W. p. 2f.) stem 4-angled: stipules linear, semi-sagittate: leaves in 5-pairs; leafets oval-oblong, mucronate: peduncles 3—4-flowered. Vicia.

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(1) stipulaceus, Le Conte. (2) Pisum maritimum, Ph. (3) polymorphus, N. Vicia stipulacea, Ph.?

9—1. Laurus. 12. 27.

carolinensis, Mx. (E. y. J. ♄.) leaves lance-oval, coriaceous, glaucous beneath: peduncles simple, terminated with a few-flowered fascicle: outer segments of the corol half as long as the inner ones. Var. *glabra*, leaves glabrous beneath. Var. *pubescens*, leaves pubescent beneath. Var. *obtusa*, leaves obovate, obtuse. Leaves perennial. 10—30 f. *S.*

benzoin, (spice bush, fever bush. O. g. y. Ap. ♄.) leaves wedge-obovate, whitish sub-pubescent beneath: flowers in clustered umbels: buds and pedicels glabrous. 4—10 f. *S.*

sassafras, (sassafras tree. O. y. M. ♄.) leaves entire and lobed on the same plant: flowers mostly dioecious. 10—25 f. *S.*

Exotic.

camphoratus, (camphor tree. ♄.) leaves about 3-nerved, lance-ovate: panicle spreading. From Japan.

Southern.

catesbyana, Mx. (E. w. M. ♄.) lance-ovate leaves and branches glabrous: panicles short peduncled: divisions of the corol oblong, obtuse, nearly equal, caducous. Leaves perennial. 6—9 f.

aestivalis, (E.) leaves veined, oblong, acuminate, rugose beneath: branches super-axillary.

melissaefolia, Wr. (1) (E. y. Ap. ♄.) leaves heart-lanceolate, veined, pubescent beneath: flowers in clustered umbels: buds and pedicels villous. 2—3 f.

geniculata, Wr. (E. y. Ap. ♄.) branches divaricate-flexuose: leaves small, oval, smooth: umbels terminal, few-flowered. 10—15 f.

albida, N. (white sassafras. E. ♄.) buds and younger branches smooth and glaucous: leaves entire or lobed, every where smooth and thin, obsoletely veined beneath: petiole longer. Is this a distinct species?

Eriogonum.

13—1. Lavandula. 42. 39.

Exotic.

spika, W. (lavender. Au. 2ſ.) leaves sessile, lance-linear, with revolute margins: spike interruptedly naked. Ballota.

15—13. Lavatera. 37. 74.

Exotic.

thuringiaca, (gay mallows. 2ſ.) lower leaves angled; upper ones 3-lobed, with the middle lobe longest: peduncles solitary.

arborea, (tree mallows. S. ♂.) leaves 7-angled: peduncles crowded.

Gossypium.

21—5. Lecanora. 57. 2.

1. *Crust adnate, uniform.*

a. *Receptacles with a black and naked disk.*

atra, Ach. crust very white: receptacle crowded, angular; margin flexuous. Var. *calliginosa*, crust dark. On trunks and rotten wood.

commutata, Ach. crust thin, with greenish-white dust: receptacle concave. Fences and rotten wood.

periclea, var. *exigua*, Ach. crust dirty white and blackish: receptacle small and crowded. Fences and rotten wood.

(1) diospyrus, Ph.

sophodes, Ach. crust verrucose, sub-determined, ashy greenish: receptacle crowded, black, brownish when moistened; margin tumid, very entire. Fences and rotten wood.

b. *Receptacles with a brown coloured disk.*

subfusca, Ach. crust smooth, cartilaginous, granulated: receptacle dark: margin thick. Bark.

ventosa, Ach. crust tesselated, with tumid warts, yellowish or grey: receptacle reddish-brown, convex. Barks and rocks.

varia, Ach. crust light yellow: receptacle generally dirty green, yellowish and brown. Old posts and fences.

c. *Receptacles with a black or coloured disk, always pruinose.*

villarsii, Ach.? crust tartareous, gyrose, granulated, whitish: receptacle black, sessile; disk concave. On rocks.

glaucoma, Ach. crust greyish: receptacle black, immersed; disk at length convex; margin obliterated. On rocks.

angulosa, Ach. crust smooth and sub-rimose: receptacle crowded and angular. On smooth bark.

cæsio-rubella, Ach. crust membranaceous and white: receptacle large, light-red. On trunks.

albella, Ach. crust cartilaginous, smooth, milk-white: receptacle light flesh-coloured. On bark.

d. *Receptacles with disks of various colours.*

perella, Ach. crust thin, warty, white: receptacle light flesh-coloured. On trunks.

tartarea, Ach. crust white, tartareous, with clustered, corol-like granules: receptacle light flesh-coloured. This is the *cudbear* of the English, and used in dying purple on woollen. Common on rocks.

salicina, Ach. crust granulated, dirty yellowish, hardly distinguishable: receptacle orange. On trunks.

fulva, Sz. crust papillated, verrucose, of a pale sulphur yellow: receptacle with an orange disk, when young immersed in the verrucæ of the crust, at length enlarging with a thin inflected margin. Common on rough bark.

2. *Crust adnate, radiating, and lobed at the circumference.*

elegans, Ach. crust orange, radiating: lobes linear and convex. On rocks

galactina, Ach. crust sub-imbricated, dirty white: receptacle crowded, angular: disk livid flesh-coloured, sub-pruinose. Rotten trunks and rocks.

juglandina, Sz. crust flat, orbicular, sub-lucid, olivaceous, towards the circumference light glaucous-green, minutely laciniated through its whole surface; central segments scaly imbricated; marginal ones flat and broader towards the apex: receptacle central, small; disk fuscous, concave; margin very thick. Common on smooth bark.

3. *Crust foliaceous, scaly, imbricated.*

smithii, Ach. crust scaly: lobes thick, roundish, waved, yellow-orange, deepening in colour towards the apex: receptacle orange, like *Parmela rutilans*. Common on trunks.

irregularis, Sz. crust scaly: lobes ascending, very minutely fringed, whitish-grey, greenish when moistened: receptacle grey pruinose, dark brown when moistened; margin thick and entire. Common on trunks.

candelaria, Ach. crust scaly, bright yellow; margin of lobes granular: receptacle bright yellow. On smooth bark.

brunnea, Ach. crust imbricated, ashy liver-colour: receptacle reddish-brown; margin crenulated. On trunks. Parmelia.

3—3. Lechea. 22. 82.

major, (1) (pin-weed. O. g-p. Ju. ♃.) erect, hirsute: leaves lance-oblong, mucronate: panicle leafy; branches bearing flowers at their tops: flowers in fascicled racemes, one-way, short-pedicelled. 1—2 f. *S.*

minor, (O. g-p. Ju. ♃.) smoothish: leaves lance-linear, acute: panicle leafy: branches elongated, bearing flowers on all parts: stem ascending. 8 i.

racemulosa, Mx. (E. Ju. ♃.) pubescence close-pressed: leaves linear, acute, ciliate: panicle slender, very branching, nakedish: flowers small, alternate, pedicelled: stem erect. *S.*

thymifolia, Mx. (E. Ju. ♃.) white down close-pressed on all sides: leaves linear, acute: panicle elongated, leafy: branches short: flowers in lateral and terminal fascicles: pedicels very short: stem erect. *S.*

tenuifolia, Mx. (W. J. ♃.) somewhat pilose: leaves very narrow: panicle divaricate: pedicels elongated, divaricate: stem erect. (Flowers solitary, racemed: stems decumbent and assurgent. Elliott.) *S.* Proserpinaca.

21—5. Lecidea. 57. 2.

1. *Receptacles black and naked constantly.*

atrata, crust thin, in little cracks, punctate, very black: receptacles in the crust, wart-form, one-coloured: disk urceolate. Dry rocks.

lapicida, crust tartarous, cracked, becoming white-cinereous: receptacles depressed between the elevations of the crust, flat, at length convex, sub-confluent, dark; corneous within, and becoming dark-cinereous: margin thin. On stones.

parasema, crust thin, sub-membranaceous, white, becoming cinereous, with dark edges, at length effuse, sub-granulated: receptacles flattish, sessile, margined, dark; becoming dark within. On bark of trees and on wood.

emeroleuca, crust sub-cartilaginous, becoming cinereous: receptacles close-pressed, flattish, somewhat margined, dark, white within. On bark of trees and decaying wood.

subuletorum, crust effuse, granulated, in some parts lobe-branched, white-cinereous: receptacles crowded, sessile, plano-convex, hemispheric, sub-confluent, somewhat margined, dark; somewhat dusty within, one-coloured. Var. *geochroa*, is fuscous-cinereous: receptacles sub-globose, often crowded into glomerate masses, and shining. On the earth and decayed moss.

alba, crust sub-determinate, membranaceous, somewhat cracked, white, with conglomerated-cinereous or greenish-milky dust at length scattered over it: receptacles minute, close-pressed, flat, dark. On trunks of trees.

asserculorum, crust effuse, thin, unequal, dark-sooty: receptacles sessile, a little plano-concave, dark; one-coloured within. On timber and dead wood.

urceolata, crust cartilaginous. membranaceous, determinate, rugose-cracked, glabrous, very white: receptacles sessile, urceolate, white-hoary; corneous and livid within under the disk: margin inflexed, sub-coarcate. On bark of trees.

atro-alba, Ach. areolæ of the crust black and white. Common on rocks.

fumosa, Ach. crust dull smoky-colour: receptacle sunk into the crust, greyish within. Common on rocks.

pantosticta, Ach. receptacle minute, immersed in the crust upon the areolæ. Common on rocks.

confluens, Ach. crust dirty white: receptacle irregular and aggregated. Common on rocks.

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(1) villosa, E.

premnea, Ach. receptacle with a whitish stratum under the disk. On trees and fences.
dolosa, Ach. crust pulverulent, rusty grey: receptacle convex. On trunks and fences.
citrinella, Ach.? crust green: receptacle small, black. On old stone fences. Rare.

2. *Receptacles black and naked, becoming reddish or sooty-yellow when damp.*

immersa, crusts effuse, thin, contiguous, becoming white: receptacles plano-convex, immersed: margins dark; disks somewhat hoary, when moistend dark red, at length somewhat convex, becoming white within. On stones, particularly on lime-stones.

3. *Receptacles dark-glaucous, grey, becoming hoary.*

albocærulescens, crusts tartarous, contiguous, uniform, at length cracked, whitish: receptacles sessile and elevated, flat, dark, becoming bluish-hoary; margin free, flexuose, naked, black. On rocks and stones.
corticola, crust sub-tartarous, granular-areolate, unequal, very white: receptacles minute, sub-immersed, grey-hoary; at length sub-globose, immarginate, naked, dark, becoming cinereous within. On the bark and trunks of trees.

4. *Receptacles dark-fuscous, or becoming fuscous, blended with some other colour.*

spadicea, crust cartilaginous, unequal, sub-granulated, becoming white-cinereous: receptacles thick, flat, fuscous, liver-brown, at length becoming dark: margin very thin, and a little wrinkled, at length a little convex, with the margin evanescent: colour uniform within. On bark of trees.
varians, crust sub-membranaceous, cracked, afterwards granulated, becoming green-cinereous, with dark limits: receptacles small, crowded, yellowish, fuscous and dark, impressed in the middle, sub-immarginate. On the bark of ash trees, &c.
russela, crust sub-cartilaginous, rugose, areolate-rimose, becoming pale-green, with dark limits: receptacles sessile, glabrous, a little tumid, red-fuscous; the disk higher than the pale, thin, entire margin. On bark of trees.
pineti, crust very thin, dirty pale cinereous: receptacles sessile, minute, aggregated, urceolate, yellowish flesh-colour, entire. In pine woods on roots, &c.
sanguineoatra, crust thin, membranaceous, effuse, light green-cinereous, at length sprinkled over with granulated dust: receptacles hemispheric, sub-immarginate, somewhat glabrous, dark purple and at length black.
versicolor, Sz. crust greenish, and bounded by a broad waving black line: receptacle small, greenish and other dark colours, clustered and stellate to the naked eye. Common on smooth bark.
luteola, Ach. crust thin, greyish, with globular pale granules: receptacle dirty yellow. On trunks and rocks.
carneola, Ach. crust thin, grey: receptacle sessile, thick, fleshy brown. On trunks.

5. *Receptacles red or light flesh-coloured.*

icmadophila, crust leprous-like, unequal, sub-granulated, whitish-green: receptacles sub-sessile, flat, flesh-coloured, at length flexuose; the disk a little wrinkled; the margin thin or none. On the earth, on trunks and decaying wood.
cupularis, crust sub-tartarous, whitish-green: receptacles superficial, urceolate, white; disk light brick-colour, scattered pulverulent spots on the outside. This is a variety of *marmorea* of Acharius. On lime and slate rocks.

coccinea, Sz. crust cinereous, and bordered with a black line, receptacle shining, convex, beautiful scarlet, whitish within. Common on trunks.

6. *Receptacles pale, becoming yellow, wax-coloured and orange.*

lutea-alba, crust thin, smooth, white; receptacles crowded, at length convex, hemispheric margined, yellowish-red, white within. Var. *holocarpa*, has a dirty cinereous yellow crust and minute flattish yellowish orange sub-obliterated receptacles. On the bark of trees rarley on rocks.

ehrhartiana, Ach. crust cartilaginous, greenish-yellow, rough, granulated: receptacle pale-yellowish. Common on rocks.

aurantiaca, Ach. crust smooth, whitish; receptacle orange, convex; margin lighter. Common on trunks and rotten wood.

7. *Crust deformed or foliaceous.*

globifera, crust imbricate, fuscous; lobes round, entire and sub-lobed, flexuose, sub-rugose, white beneath: receptacles at length sub-immarginate, subglobose, obscurely reddish-yellow. On rocks.

decipiens, crust sub-imbricate; lobes somewhat separated, sub-peltate, roundish, flesh-coloured and becoming fuscous, white beneath: receptacles marginal, convex and sub-globose, sub-immarginate, black. On the earth in mountains, particularly lime-stone mountains.

sorediata, crust orbicular, rugose-plicate, imbricate, cinereous; margins of the lobes elevated and bearing the fruit-dots, dark beneath with spongy fibres: receptacles scattered, close-pressed, flat, dark.

demissa, Ach. crust warty, sub-imbricated, lobed at the margin; receptacle reddish, depressed. On earth and rocks. Calicium.

19—12. LECONTIA. 2. 7.

virginicum, (1) (poison arum. O. g. J. 2f.) stemless: leaves hastate, heart-form, acute; lobes obtuse: spathe elongated, incurved: spadix for a long distance from the summit bearing staminate flowers. 12—18 i. *S.* Caladium.

10—1. LEDUM. 18. 50.

palustre, (marsh-tea. E. w. M. ♄.) leaves linear, margins revolute, iron-rust down beneath: stamens 10, longer than the corol.

latifolium, A. (2) (labrador-tea. O. w. r. J. ♄.) leaves linear-oblong, folded in at the margin, iron-rust down beneath: stamens mostly 5, equalling the corol. About swamps. Leiophyllum.

Ledum, LEIOPHYLLUM.

3—2. LEERSIA. 4. 10.

virginica, W. (white grass. E. Ju. 2f.) panicle simple; lower branches diffuse: flowers appressed, monandrous, sparingly ciliate on the keel. 3—4 f. *S.*

oryzoides, (3) (cut grass. E. Au. 2f.) panicle diffuse, sheathed at the base: flowers triandrous, spreading: keel of the glumes conspicuously ciliate. 3—5 f. *S.*

Southern.

lenticularis, Mx. (catch-fly grass. O. Ju. 2f.) panicle erect: flowers large, roundish, diandrous, imbricate: keel and nerves ciliate. 2—4 f. Paspalum.

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(1) Arum, L. Calla, Mx. (2) palustre, Mx. (3) Phalaris, L.

10—1. LEIOPHYLLUM. 18. 50.

buxifolium, P. (1) (sand myrtle. E. w. ♄.) leaves small, lance-oval, entire, glabrous, lucid, revolute at the margin: corymbs terminal. 6—18 i. *S.* Clethra.

19—2. LEMNA. 54. 6.

trisulca, (duck meat. O. ☼.) leaves thin, lance-oval, caudate at one end, serrate at the other: roots solitary. Water.
minor, (green duck meat. O. J. ☼.) leaves nearly ovate, compressed: roots solitary. Var. *cyclostasa*, leaves elliptic, flat on both sides, cohering in a circular arc: roots solitary. Water. *S.*
gibba, (W. ☼.) leaves obovate, nearly flat above, hemispherical beneath: roots solitary. Water.
polyrrhiza, (water flaxseed. O. Ju. ☼.) leaves round obovate, compressed; roots numerous, fascicled. Water. *S.* Typha.

Leontice, CAULOPHYLLUM.

17—1. LEONTODON. 49, 53.

taraxacum, (dandelion. O. y. Ap. ♃.) outer calyx reflexed: scape 1-flowered; leaves runcinate, with toothed divisions. Introduced.
palustre, S. (♃.) outer calyx scales short, erect, ovate: leaves sinuate-toothed, somewhat glabrous. *S.* Prenanthes.

13—1. LEONURUS. 42. 39.

Exotic.
cardiaca, (motherwort. w-r. Ju. ♃.) leaves 3-lobed, toothed, bases wedge-form: calyx prickly, less than the corol. Naturalized. 2—4 f.
marrubiastrum, W. (r. Au.) leaves lance-ovate, toothed: calyx somewhat prickly, as long as the corol. Naturalized. 2—4 f. Verbena.

21—6. LEOTIA. 58. 1.

bulliardi, stipe elongated, snow-white, undulated: pileus ovate, obtuse, orange-coloured.
lubrica, yellowish-green, sub-tremulous: pileus convex: stipe cylindric. Helvella.

14—1. LEPIDIUM. 39. 63.

virginicum, (wild peppergrass. O. w. J. ♂.) radical leaves pinnatifid; cauline ones lance-linear, somewhat gash-serrate: flowers 4-petalled, mostly with but two stamens: silicles lens-form. 12—18 i. *S.*

Exotic.
sativum, (peppergrass. w. Ju. ☼.) leaves oblong, many-cleft. Camelina.

21—5. LEPRARIA. 57. 2.

chlorina, (leprous lichen,) crust thick, cushion-like, greenish-yellow; made up of little pulverulent masses aggregated into sub-villose globules. On lime rocks, &c.
flava, crust effuse, equal, thin, sub-rimose, very yellow; made up of nakedish, sub-globose granulations. On bark of trees and walls.
farinosa, crust very thin, membranaceous, becoming white: suffused with white conglobated dust. On the bark of old trees. Sphaeria.

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(1) Amyrsine buxifolia, Ph. Ledum thymifolium, Lk.

2—1. Leptandra. 40. 40.

virginica, (1) (Culver's physic. O. w. Au. 2f.) spikes terminal, long: leaves whorled: stem-erect. Var. *purpurea*, Ph. flowers purple. 3—8 f. *S.* Gratiola.

Leptanthus, Schollera.

17—3. Leptopoda. 49. 54.

Southern.

fimbriata, W. (2) (E. y. Ap. 2f.) stem viscid-pubescent, striate: leaves alternate, lance-linear, half-clasping, glabrous, punctate; cauline ones gash-toothed: chaff of the egret torn. 2 f.

decurrens, Macbride. (3) (E. y. Ap. 2f.) stem very glabrous: leaves lance-linear, toothed, glabrous, decurrent: chaff of the egret torn. 12—18 i. Balduina.

3—2. Lepturus. 4. 10.

paniculatus, N. (W. J. ☼.) rachis incurved, compound, acutely triangular; branches and summit floriferous: spikes subulate, compressed, one-sided: calyx 2-valved, acuminate, 1-flowered. 10 i. Rotboellia.

5—3. Lepuropetalon. E. (4) 21. 43.

Southern.

spathulatum, M. (E. w. Ap. ☼.) glabrous: stem erect and procumbent, somewhat succulent, sub-angled: leaves alternate, sessile, lance-spathulate, obtuse, entire. 1-2 i. Parnassia.

21—2. Leskia. 56. 4.

compressa, decumbent: branches two-ranked, facing two ways, compressed: leaves lanceolate, flattish, somewhat extended: capsule oblong, straight; lid conic. On trunks of trees.

acuminata, creeping: branches short, sum-simple: leaves lance-acuminate, extended, fascicled: capsule erect; lid oblique, conic. On trunks of trees.

imbricata, creeping: branches shortish, simple, erect, bearing flowers: leaves extended, ovate, acutish, imbricate: capsule oblong erect; lid conic.

gracilescens, creeping: branches somewhat simple: leaves acute, lanceolate, extended, imbricate-spreading: capsule straight; lid conic. On the earth.

rupincola, creeping: branches somewhat simple, rising: leaves cordate-acuminate, imbricate, spreading: capsule cylindric, erect. On rocks.

asciculosa, creeping: branches often crowded together in fascicles, short, simple: leaves cordate, extended, imbricate: calyx extended, long-acuminate: capsule nodding. In damp places.

varia, creeping: branchlets simple, erectish, varying in length: leaves concave, spreading, lance-acuminate: calyx and leaves oblong, extended, fascicled: capsule nodding.

squarrosa, creeping: the foliation somewhat 2-ranked, depressed, lax-imbricate, with squarrose hooks behind: leaves lanceolate, slenderly acuminate: calyx rather long, linear-subulate: capsule nodding in an arch. Damp places. Pterigophyllum.

16—10. Lespedeza. (5) 32. 92.

capitata, Mx. (6) (O. w-p. J. 2f.) leaves ternate, lance-oblong, obtuse, silky

(1) Callistachia, Raf. Veronica. L. (2) puberula, Macbride. Galardia, Mx. (3) Helenium, N. (4) Pyxidanthera, M. (5) Hedysarum, W. (6) frutescens, W.

beneath: stipules subulate: racemes axillary, ovate, shorter than the leaves: legumes hairy, shorter than the calyx. 3—6. f. *S.*

angustifolia, Ph. (E. w-p. S. 2f.) leaves oblong, oval and lanceolate, hoary-pubescent beneath: racemes capitate, longer than the leaves: corol longer than the calyx. 3—5 f. *S.*

stuvei, N. (E. p. S.) erect, simple, soft-downy: leafets oval: spikes peduncled, scarcely longer than the leaves: legume naked, pubescent. 2—3 f. *S.*

polystachia, Mx. (1) (E. w-r. Ju. 2f.) erect, branching, very villose: leafets round-oval: spikes axillary, long peduncled: corol and legume about equal to the calyx. 2—4 f. *S.*

sessiliflora, Mx. (2) (bush clover. O. p. Ju. 2f.) erect: leaves oblong: fascicles of flowers sessile, numerous: legume nearly naked, acute: calyx minute. Var. *reticulata*, stem simple, erect or erectish: leaves pubescent beneath. 1—3 f. *S.*

violacea, W. (3) (O. p. Ju. 2f.) leafets oval, obtuse: racemes umbelled, as long as the petiole: flowers in pairs: legume rhombic, reticulate, glabrous. 1—2 f. *S.*

procumbens, Mx. (4) (E. p. & y. Ju. 2f.) procumbent, slender, pubescent: leafets oval: peduncles very long: flowers in setaceous spikes: legumes naked: calyx minute. *S.*

divergens, M. (5) (E. p. Ju. 2f.) diffuse, branched: leafets oblong, obtuse, close-pressed, hairy beneath: racemes longer than the petioles: flowers in pairs: legumes ovate, reticulate, smooth. Probably a variety of the violacea. 1—2 f. *S.*

repens, (p. Au. 2f.) leaves round-oval, emarginate: racemes axillary: legume repand toothed: stem creeping. Aeschynomene.

13—1. LEUCAS. 42. 39.

Southern.

martinicensis, Br. (E.) leaves entire: whorls many-flowered, capitate. Probably introduced. Hyptis.

21—2. LEUCODON. 56. 4.

sciuroides, stem elongated, sub-simple, curved when dry: leaves closely imbricated, lanceolate, striate: peduncle lateral, shortish, wholly sheathed within the long calyx or pericheth. Neckera.

12—1. LEWISIA. 13. 83.

Southern.

rediviva, Ph. (W. w. Ju. 2f.) leaves radical, linear, somewhat fleshy, obtusish: scape 1—2-flowered: pedicel geniculate at the base: capsule oblong. Glaucium.

17—1. LIATRIS. 49. 54.

squarrosa, W. (6) (r. Au. 2f.) stem simple, hairy: leaves long-linear, nerved; margins a little scabrous: raceme leafy, few-flowered: scales of the calyx leafy above, lanceolate, rigid, spreading. 2—3 f. *S.*

scariosa, (7) (O. b. Au. 2f.) stem simple, sub-pubescent: leaves lanceolate, tapering to both ends, glabrous, with scabrous margins: calyxes squarrose below, racemed, alternate, distant: scales spatulate, with membranous coloured margins. *S.*

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(1) hirtum, W. (2) Hedysarum reticulatum, M. Medecago virginica, L. (3) divergens, Ph. (4) prostrata, Ph. (5) Hedysarum, M. (6) Serratula, L. (7) serratula, L.

spicata, W. (1) (gay feather, button snakeroot. O. r. Au. 2f.) stem simple, tall: leaves linear, glabrous, ciliate at the base, nerved, and punctate: spike very long: flowers sessile: scales of the calyx linear-oblong, obtuse, close-pressed. 2—4 f. *S.*

pilosa, W. (E. p. S. 2f.) stem simple, pubescent: leaves linear, pilose, ciliate: heads racemose, lax: scales of the calyx oblong, obtuse: pedicels bracted. Var. *dubia*, E. stem striate sub-pilose: leaves long-linear; lower ones lance-linear, punctate, acute, pilose and ciliate near the base, nearly glabrous towards the summit: racemes long, leafy. Perhaps a distinct species. Elliott. 2—3 f. *S.*

cylindracea, Mx. (W. p. Au. 2f.) slender, hirsute: leaves grass-like: spike few-flowered: calyx sub-sessile, cylindric, few-flowered; scales round at the summit, abruptly mucronate. 1—2 f. *S.*

Southern.

1. *Flowers in spikes or racemes: roots bulbous.*

pycnostachya, Mx. (O. S. 2f.) stem simple, hirsute: leaves straight, narrow-linear, pubescent: spike long: flowers clustered, sessile: calyx appressed, squarrose at the summit. 2—4 f.

graminifolia, Wr. (E. p. S. 2f.) stem simple, glabrous: leaves very long-linear, glabrous, nerved, margin sub-scabrous; midrib hairy above: flowers distant sub-sessile: scales of the calyx oblong, obtuse, mucronate, ciliate, appressed; inner ones coloured. 2—4 f.

heterophylla, W. (E. S. 2f.) stem simple, glabrous: leaves lanceolate, glabrous, smooth; upper ones lance-linear, much smaller: heads spiked, short-peduncled, sub-squarrose: scales of the calyx lanceolate, acute, naked.

aspera, Mx. (O. S. 2f.) stem somewhat branching, scabrous-pubescent: leaves lance-linear, very rough: heads short, spiked, distinctly alternate, solitary, sessile: scales of the calyx roundish, obtuse, connivent.

gracilis, Ph. (E. p. S. 2f.) stem slender, hairy, (glabrous, Ph.) leaves linear glabrous, ciliate at the base: heads in racemes, about 7-flowered: scales of the calyx obovate, ciliate, appressed. A variety of the *spicata*, N. 2—3 f.

tenuifolia, N. (E. p. S.) stem slender, glabrous: lower leaves crowded, linear, a little hairy at the base; upper ones setaceous: raceme very long: pedicels leafy: scales of the calyx, oblong, mucronate. 2—4 f.

resinosa, N. (E. p.) glabrous: leaves linear, crowded: heads spiked, oblong, 4—5-flowered: scales of the calyx obtuse, appressed, resinous, at length hoary. 2 f.

secunda, E. (E. p. S. 2f.) stem reclining, pubescent: leaves linear, glabrous, sparingly ciliate at the base: racemes one-sided: scales of the calyx lanceolate, acute, appressed. 2—3 f.

sphaeroidea, Mx. (E. p. S. 2f.) leaves smooth; lower ones broad, lanceolate; upper ones narrow: flowers racemed, large, solitary, alternate: calyx sub-globose; scales oval, erect. 2—4 f.

elegans, Wr. (2) (O. p-r. Oc. 2f.) stem simple, villous: leaves lance-linear, sub-scabrous beneath: raceme cylindrical; flowers crowded: inner scales of the calyx ligulate, coloured. 3—5 f.

2. *Flowers in panicles or corymbs: roots not bulbous.*

paucifiora, Ph. (E. 2f.) stem simple, glabrous: leaves linear: panicle virgate, leafy; branches short, few-flowered: calyx sessile, secund, 3—5-flowered: scales erect, lanceolate, acute, glabrous.

paniculata, Wr. (E. p. S. 2f.) stem simple, hairy-viscid: leaves lanceolate,

(1) macrostachya, Mx. Anonymos graminifolius, Wr. Serratula spicata, L. (2) Staehelina, W.

nerved, sub-glabrous: panicle contracted: calyx about 5-flowered; scales lanceolate. 1—2 f.

odoratissima, Wr. (E. p. S. 2f.) very glabrous: stem simple: leaves ovate and lanceolate, nerved, toothed, sub-glaucous: panicle corymbed: calyx 7—8-flowered; scales obovate, obtuse. 3—4 f.

tomentosa, Mx. (1) (E. p. S. 2f.) stem simple and with the wedge-lanceolate leaves hirsute: corymb few-flowered, depressed-divaricate: branches few-flowered: calyx tomentose; scales ovate, acute. 2 f.

bellidifolia, Mx. (E. p. 2f.) low, sub-glabrous: leaves wedge-oblanceolate: corymb unequal: flowers all somewhat long-pedicelled: scales of the calyx oblong-oval, obtuse. 8—12 i.

walteri, E. (E. p. S. 2f.) stem simple, hairy near the summit: leaves lanceolate, acute, glabrous, punctate, attenuate at the base: calyx many-flowered; scales acute, tomentose. 2 f.

oppositifolia, N. (E. Florida. 2f?) pubescent: leaves lanceolate, nearly opposite, nerved: stem branching; branches corymb-panicled: calyxes cylindric-ovate, smallish, about 15—20-flowered; scales oblong, obtuse; inner ones coloured: egret a little scabrous.

fruticosa, N. (E. Florida. p. ♄.) glabrous: stem frutise; branches corymbed: leaves wedge-obovate, punctate: calyxes sub-5-flowered; divisions acuminate. Vernonia.

5—2. LIGUSTICUM. 45. 60.

scoticum, (E. w. Ju. 2f.) cauline leaves biternate: upper ones trifoliate; lateral leafets trapezoid, terminal one rhomboid: umbels stiffly erect: involucres linear, many-leaved. 18 i.

actaeifolium, Mx. (2) (E. Ju. 2f.) leaves biternate; leafets oval, equally toothed: partial involucre setaceous: fruit oblong-oval, with 10 somewhat winged ribs. 3 f. *S.*

Exotic.

levisticum, (lovage, smellage. w. 2f.) leaves long, numerous; leafets above gashed. Strong-scented. Apium.

Ligusticum, THAPSIA.

2—1. LIGUSTRUM. 44. 37.

vulgare, (prim. E. w. J. ♄.) leaves lanceolate, acutish: panicle compact. Perhaps introduced. Chionanthus.

6—1. LILIUM. 10. 14.

philadelphicum, (red lily. O. r. y. J. 2f.) leaves whorled, lance-linear: corol erect, bell-form, spreading: petals lanceolate, having claws. 1—3 f. *S.*

canadense, (nodding lily. O. y. r. Ju. 2f.) leaves remotely whorled, lanceolate: peduncles terminal, elongated, mostly in threes: corol nodding: petals spreading. 2—3 f. *S.*

superbum, (superb lily. E. y. p. Ju. 2f.) leaves lance-linear, 3-nerved, glabrous; lower ones whorled; upper ones scattered: flowers in a pyramid-raceme, recurved: petals revolute. 3—6 f. *S.*

catesbaei, Wr. (3) (southern lily. y. r. J. 2f.) leaves scattered, lance-linear: stem 1-flowered: corol erect: petals with long claws; margin undulate, apex reflexed. 1—2 f. *S.*

pennsylvanicum, Ker. (A. r. y. Ju. 2f.) leaves scattered, lance-linear; the uppermost ones whorled, about equal to the flowers: stem about 1-flowered, somewhat 5-sided: peduncles woolly: corol erect, woolly outside.

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(1) corymbosa, N. (2) Thaspium, N. (3) spectabile, Sy. carolinianum Lk.

Exotic.

candidum, (white lily. w. J. 2f.) leaves lanceolate, scattered, tapering to the base: corol bell-form, glabrous within.

bulbiferum, (orange lily. y. J. 2f.) leaves scattered, 3-nerved: corol campanulate, erect, scabrous within.

Southern.

pudicum, Ph. (W. y. M. 2f.) leaves scattered, lance-linear: stem 1-flowered: corol bell-form, nodding; petals erect, sessile, spatulate-obovate, obtuse, flat within.

umbellatum, Ph. (1) (W. r. Ju. 2f.) leaves scattered, linear, short, acute; upper ones whorled: flowers 1—5, terminal, erect; petals unguiculate, lanceolate, spreading.

carolinianum, Mx. (E. y. r. Au. 2f.) leaves whorled and scattered, wedge-lanceolate: flowers few, (1—3,) terminal: peduncles thick: corol revolute. This may be a variety of the *superbum*, E. 2 f. Erythronium.

3—1. LIMNETIS. (2) 3. 9.

cynosuroides, W. (3) (many-spiked salt-grass. O. Au. 2f.) spikes numerous, (10—40,) peduncled, panicled, spreading: leaves broad, flat, at length convolute: calyx with a short awn on one of the glumes: style 2-cleft at the summit. 4—9 f. *S.*

juncea, Mx. (4) (rush salt grass. L. Ju. 2f.) leaves 2-ranked, convolute, spreading: spikes few, (1—3,) peduncled: peduncles smooth: corol obtusish: styles 2. 18 i.

glabra, M. (O. Au. 2f.) leaves concave, erect: spikes alternate, sessile, erect, appressed: corol smoothish on the keel: style deep-cleft. 3—5 f. *S.* Oryzopsis.

13—2. LIMOSELLA. 40. 40.

subulata, Ives. (mud wort. E. b-w. Au. 2f.) leaves linear, very narrow, scarcely dilated at the apex: scape 1-flowered, as long as the leaves. 1 i. Scrophularia.

2—1. LINDERNIA. 40. 40.

attenuata, M. (false hedge hyssop. E. b. Au. ☼.) leaves lanceolate and obovate, narrowed at the base: peduncles shorter than the leaves, erect. *S.*

dilatata, M. (6) (E. b. Au. ☼.) leaves dilated at the base, clasping, remotely toothed: peduncles longer than the leaves. *S.*

monticola, M. (E. 2f.) stem slender, dichotomous: radical leaves spatulate; cauline ones linear, small and remote: peduncles very long, at length deflected. 4—6 i. *S.*

Southern.

grandiflora, N. (E. 2f.) leaves roundish, entire, nerveless, half-clasping: peduncles very long, axillary and terminal: stem creeping.

refracta, E. (E. b. J. 2f.) stem slender, erect, branching, glabrous: radical leaves spatulate-oval; upper ones subulate: flowers solitary, axillary and terminal: peduncles refracted after flowering. 8—12 i. Pinguicula.

4—1. LINNAEA. 48. 58.

borealis, W. (twin-flower. O. w-r. J. 2f.) stem prostrate: branches erect, each bearing 2 flowers: leaves roundish, crenate. Woods. Proserpinaca.

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(1) andinum, N. (2) Spartina, Sr. (3) polystachya & cynosuroides, Ph. (4) Trachynotia, Mx. Spartina, W. (6) Pyxidaria, Ph. Gratiola inequalis, Wr.

5—5. Linum. 14. 82.

virginianum, (wild flax. O. y. Ju. ☼.) leafets of the calyx acute: panicle terminal: flowers remotely alternate: leaves lance-linear, scattered; radical ones ovate. 1—2 f. *S.*

Exotic.

usitatissimum, (flax. b. Ju. ☼.) leafets of the calyx ovate, acute, 3-nerved: petals crenate: leaves lanceolate, alternate: stem sub-solitary.

Southern.

perenne, var. *lewisii*, Ph. (W. b. Ju. 2f.) divisions of the calyx ovate, acuminate: petals wedge-form, rounded at the apex: leaves scattered, lance-linear, mucronate: stems tall, numerous.

rigidum, (W. y.) divisions of the calyx ovate, acuminate, 3-nerved, ciliate: petals oblong, narrow: leaves stiffly erect, linear, short. 6 i.

Sibbaldia.

19—13. Liquidambar. 51. 99.

styraciflua, (sweet gum. E. M. ♄.) leaves palmate, with acuminate lobes, serrate, villose at the meeting of the veins beneath. *S.* Juglans.

12—13. Liriodendron. 52. 75.

tulipifera, (white wood, tulip tree. O. y. r. J. ♄.) leaves truncate at the end, with 2 side lobes. A beautiful flowering tree. 90—150 f. *S.* Porcelia.

5—1. Lisianthus. 47. 46.

Southern.

glaucifolius, Jn? (W. y.) stem herbaceous, terete: leaves oblong-ovate, sessile, glaucous, acute, 3-nerved: flowers terminal, corymbed: peduncles elongated. T. & J. Phlox.

18—1. Listera. 7. 21.

convallaroides, (1) (lily orchis. E. g-p. M. 2f.) stem with two round cordate, acute, opposite leaves: spike few-flowered: lip oblong, obtusely 2-lobed germ sub-globose: root fibrous. 4—6 i. *S.*

cordata, Mx. (2) (E. g-p. M. 2f.) stem with two opposite, roundish-cordate leaves: raceme loose: colum without any appendage behind: lip elongated, 2-toothed at the base, deeply bifid; segments sub-divaricate and acute. 4—8 i.

Southern.

pubescens, Ph. (3) (E. g-w. J. 2f.) leaves radical, ovate, acute: scape leafless, pubescent, lax-flowered: flowers pedicelled: lip 2-lobed, scarcely longer than the connivent petals: capsules clavate: root palmate.

Cranichis.

5—1. Lithospermum. 41. 42.

arvense, (steen-crout, stone-seed, wheat-thief. O. w. M. ☼.) stem erect, branched: leaves lance-linear, rather acute, (lower ones obtuse,) veinless, hairy: calyx nearly as long as the corol; segments spreading: seeds rugose. 8—15 i. *S.*

officinale, (E. y. M. 2f.) stem erect, much branched: leaves lanceolate, acute, nerved, scabrous above, hairy beneath: calyx as long as the tube of the corol: seeds smooth. 2 f.

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(1) Epipactis, Sz. (2) Ophrys, Mx. (3) Epipactis, Ph.

maritimum, (1) (L. b. Ju. 2f.) very smooth: stem procumbent, branched: leaves oval-spatulate, fleshy: corol scarcely twice the length of the calyx.
denticulatum, Rs. (2) (E. p. J. 2f.) stem erect: leaves nerved, sub-glabrous, acute; margin scabrous, with minute teeth; radical ones ovate; cauline ones oblong: divisions of the calyx denticulate on the margin. 6—12 i.

Southern.

latifolium, Mx. (O. y. Ju. 2f.) seed turgid, ovate, shining, with hollowed punctures: fruit-bearing calyx spreading, exceeding the corol: leaves ovate-oblong, nerved.
angustifolium, Mx. (W. w. Ju. ☼.) seed turgidly ovate, shining, with hollow punctures on every part: flowers generally lateral: leaves linear, with close-pressed pubescence: stem procumbent.
apulum, W. (O. y. Ju. ☼.) seed muricate: spikes terminal, one-sided: bracts lanceolate: leaves lance-linear, acute. Onosmodium.

Lithospermum, BATSCHIA.

5—1. LOBELIA.—29.-52.

dortmanna, (3) (E. b. Ju. 2f.) radical leaves linear, recurved, fistulous, with two cavities, entire: scape simple, racemose, somewhat naked: flowers remote, peduncled. *S.*
cardinalis, (cardinal flower. O. r. Ju. 2f.) erect, simple, pubescent: leaves lance-ovate, acuminate, denticulate: racemes somewhat one-sided, many-flowered: stamens longer than corols. Damp. 1—2 f. *S.*
syphilitica, (O. b. Ju. 2f.) erect, simple, hirsute, with short hairs: leaves lance-ovate, sub-serrate: raceme leafy: calyx hirsute, with reflexed sinuses. 18—24 i. *S.*
inflata, (wild tobacco. O. b. Ju. ☼.) erect, branching, very hirsute: leaves ovate, serrate: racemes leafy: capsules inflated. 12—18 i. *S.*
kalmii, (O. b. Ju. ☼.) slender, erect, sub-simple: radical leaves spatulate: cauline ones linear, delicately toothed: flowers racemed, alternate, remote, pedicelled. Var. *gracilis*, has a minutely scabrous stem: peduncles shorter than the flowers: segments of the calyx longer than the capsule. 6—24 i. *S.*
claytoniana, Mx. (4) (O. b. Ju. 2f.) erect, simple, sub-pubescent: leaves oblong, obtusish; radical ones entire; cauline ones denticulate above: raceme wand-like: bracts subulate. 18—24 i. *S.*
puberula, Mx. (E. b. Ju. 2f.) erect, very simple, pubescent: leaves oblong-oval, repand-serrulate: flowers spiked, alternate, sub-sessile: germs hispid: calyx ciliate. 2 f. *S.*

Southern.

aphylla, N. (E. Florida. 2f.) very small: stem filiform, sub-simple, scaly: peduncles remote, elongated. 4—6 i.
amoena, Mx. (E. b. Ju. 2f.) erect, very glabrous, (pubescent, E.) leaves broad-lanceolate, serrate: spike many-flowered, one-sided: divisions of the calyx entire: inferior divisions of the corol oval, acute. 2—3 f.
glandulosa, Wr. (E. b. S. 2f.) stem erect: leaves lance-linear, somewhat fleshy, denticulate: segments of the calyx denticulate: flowers in racemes. 1—2 f.
fulgens, Donn. (W. r. Ju. 2f.) erect, simple, sub-pubescent: leaves very long-lanceolate, attenuated, sub-entire: raceme many-flowered: stamens and pistils as long as the corol. 2—4 f.

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(1) Pulmonaria, L. parviflora, Ph. (2) Pulmonaria, Rs. sibirica, Ph. (3) paludosa, N. (4) spicata, Lk. goodenioides, W. pallida, M.

michauxii, N. (1) (E. p. Ju. ☼.) glabrous, branching above: leaves petioled, ovate, crenate-dentate; lowest ones roundish: racemes lax; peduncles elongated. Diervilla.

3—2. Lolium. 4. 10.

perenne, (E. M. 2f.) florets much longer than the calyx, unarmed, linear-oblong, compressed. Introduced. 18 i.
temulentum, (E. Ju. ☼.) florets shorter than the calyx, as long as the bristle at their extremity: culm scabrous above. 2 f. Eleusine.

5—1. Lonicera. (2) 48. 58.

hirsuta, Ea. (rough woodbine. E. y. J. ♄.) corol ringent, hairy: filaments bearded: leaves hirsute, abruptly acuminate; lower ones obovate; upper ones connate, (ovate, oval, and obovate.) Flowers in whorled spikes, large: leaves ciliate, all very hairy. Stem twining around trees to the height of 20 to 30 feet. This species is remarkably different from all other species of the genus; being very rough and hairy. Found first two miles west of Wiliams College, Mass. where I saw hundreds in flower, climbing the trees and snrubs of an elevated ridge or hill, in the summer of 1817. It has since been found in Middlebury, Vermont, Worcester, Mass. Troy and Fairfield, N. Y.* See Boston Flora, p. 88. 2d Ed.
flava, Sims. (3) (E. y. J. ♄.) spikes with whorled heads: corol sub-ringent-like, with divisions oblong, obtuse: leaves ovate, glaucous beneath, with cartilaginous margins; upper ones conate-perfoliate. *S.*
parviflora, Lk. (4) (O. y. J. ♄.) spikes with whorled heads: corol ringent, gibbous at the base: filaments bearded: leaves deciduous, glaucous beneath, connate; floral ones perfoliate. *S.*
grata, A. (E. r. y. J. ♄.) spike with whorls very near each other: corol ringent-like, with a long tube: leaves perennial, obovate, sub-mucronate, net-veined and paler beneath; upper ones connate-perfoliate. *S.*
sempervirens, A. (E. r. y. M. ♄.) spikes with distant, nakedish whorls: corols sub-equal; tube ventricose above: leaves ovate and obovate, glaucous beneath; upper ones connate-perfoliate. Leaves perennial. *S.*

Exotic.

caprifolium, (honeysuckle. ♄.) corols ringent-like, terminal: sessile leaves connate-perfoliate at the top.
periclymenum, (woodbine. J. ♄.) flowers in ovate, imbricate, terminal heads: leaves all distinct. Var. *quercifolia*, leaves sinuate.

Southern.

ciliosum, Ph. (W. y. J. ♄.) spikes with whorled, approximate heads, sub-sessile: corol sub-equal: tube hirsute, ventricose in the middle: leaves somewhat clasping, sessile and petioled, ovate, glaucous beneath; margin distinctly ciliate; upper ones connate-perfoliate. Xylosteum.

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(1) cliffortiana, Mx. not L. (2) Caprifolium, J. (3) fraseri, Ph. (4) dioica & media, L. Caprifolium bracteosum, Mx.

* I published this species in the Manual in the year 1818, and repeated it in the succeeding editions. Afterwards Goldie came to this state, and also travelled in Canada, where he found it, and examined it with my Manual. In 1822 he published it as a new discovery, under the name *pubescens*, in the Edinburgh Phil. Journal. I do not claim the discovery, for since I published it, I learned that Le Conte had examined it. But the truth should be told.

Lonicera, DIERVILLA. XYLOSTEUM.

Lotus, TRIGONELLA.

4—1. LUDWIGIA. 17. 88.

alternifolia, (1) (seed box. O. y. Ju. 2f.) erect, branching, sub-glabrous: leaves alternate, lanceolate, hoary beneath: peduncles axillary, 1-flowered: capsules 4-sided: divisions of the calyx large, coloured, persistent. 1 3 f. *S.*

pilosa, Wr. (2) (E. y. Ju. 2f.) erect, branching, hirsute: leaves alternate, oblong, sessile, hirsute both sides: peduncles 1-flowered, axillary: capsules globose-quadrangular, winged, 2-bracted at the base. 2 f. *S.*

uniflora, R. (E.) stem straight, simple: leaves alternate, lanceolate, acute, glabrous: flower terminal: petals longer than the calyx. Probably *alternifolia*. Torrey.

Southern.

mollis, Mx. (E. Au. 2f.) villous: stem erect, much branched: leaves lanceolate: flowers generally clustered: capsule globose, 2-leaved.

capitata, Mx. (3) (E. y. Au. 2f.) stem erect, virgate: leaves lance-linear, glabrous: flowers generally in terminal heads: bracts longer than the calyx.

pedunculosa, Mx. (E. y. J. 2f.) stem procumbent, radicant: leaves opposite, lanceolate: peduncles 1-flowered, longer than the leaves. 3—6 i.

linearis, Wr. (4) (E. y. Au. 2f.) stem erect, branching, angled near the summit: leaves alternate, linear, glabrous, sub-serrulate: flowers axillary, solitary, sessile. 2 f.

decurrens, Wr. (E. y. Au. ☼.) erect, very branching, glabrous: leaves alternate, lance-oval, decurrent: flowers octandrous. 2 f.

natans, E. (E. y. Ju.) swimming and creeping: leaves opposite, lance-spatulate: flowers axillary, sessile: petals as long as the calyx.

Isnardia.

Ludwigia, ISNARDIA.

14—1. LUNARIA. 39. 63.

Exotic.

annua, (honesty. p. ♂.) leaves obtusely toothed: silicles oval, obtuse at both ends. Naturalized.

rediviva, (satin flower. b-p. 2f.) leaves with mucronate teeth: silicles tapering to both ends. Flowers odorous. Isatis.

16—10. LUPINASTER. 32. 93.

Southern.

macrocephalus, Ph. (W. y. & p. M. 2f.) leafets nine, oblanceolate: petioles very long: stipules wedge-form, gash-3-toothed: teeth of the calyx filiform, plumose. Melilotus.

17—10. LUPINUS. 32. 93.

perennis, (wild lupine. O. b. M. 2f.) stem and leaves smoothish: leaves digitate, with about 8 to 10 leafets, which are oblanceolate, obtusish: calyxes alternate, not appendaged: banner emarginate, keel entire. 12—18 i. *S.*

Exotic.

albus, (white lupine. w. Au. ☼.) calyxes not appendaged, alternate: banner entire, keel 3-toothed.

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(1) macrocarpa, Mx. ramosissima, Wr. (2) hirsuta, Ph. (3) suffruticosa, Wr. (4) angustifolia, Mx.

hirsutus, (garden lupine. b. ☼.) calyxes appendaged, alternate: banner 2-parted; keel 3-toothed.
pilosus, (rose lupine. r. w. ☼.) calyxes appendaged, whorled: banner 2-parted; keel entire.
luteus, (yellow lupine. y. ☼.) calyxes appendaged, whorled: banner 2-parted; keel 3-toothed.

Southern.

villosus, (hairy lupine. E. w. r. p. J. 2f.) very villose; leaves simple, oblong: calyxes not appendaged, alternate in a long spike: banner 2-cleft; keel entire, long.
diffusus, N. (E. Ap. 2f.) villose, silky: stems numerous, diffuse, decumbent: leaves simple, oblong, obovate: petioles and stipules short, naked.
nootkatensis, Donn. (W. Ju. 2f.) stem and leaves hirsute: leaves digitate; leafets (7—8) lanceolate, obtuse: calyxes whorled, not appendaged: banner emarginate: keel entire.
sericeus, Ph. (W. r. p. Ju. 2f.) stem and leaves silky-tomentose: leaves digitate; leafets (7—8) lanceolate, acute, silky both sides: calyxes somewhat whorled, not appendaged: banner gashed: keel entire.
argenteus, Ph. (W. y-w. Ju. 2f.) leaves digitate; leafets (5—7) lance-linear, acute, glabrous above, silvery-silky beneath: calyxes alternate, not appendaged: banner obtuse: keel entire.
pusillus, Ph. (W. b. J. ☼. or ♂.) small and very hirsute: leaves digitate; leafets (5—7) wedge-oblong, glabrous above: calyxes alternate, not appendaged: banner 2-parted: keel entire: legume about 2-seeded. 4—6 i.
decumbens, T. & J. (W. p.) suffruticose, sub-decumbent: flowers pedicelled, somewhat whorled, bracted: calyx silky-hirsute: banner and keel entire: leafets lance-oblong, acute and obtuse, silky beneath. Crotolaria.

6—1. LUZULA. (1) 5. 13.

pilosa, (O. M. 2f.) leaves hairy: panicle sub-cymose: peduncles 1-flowered, reflexed: leafets of the calyx acuminate, rather shorter than the obtuse capsule. 6 i.
campestris, (O. M. 2f.) leaves hairy: spikes sessile and peduncled: leafets of the calyx acuminate, longer than the obtuse capsule. 1 f. *S.*
melanocarpa, Mx. (W. Ju.) culm leafy: leaves sub-lanceolate, smooth: panicles capillary, loose: flowers distinctly pedicelled: capsules black.
spicata, W. (E. Au.) leaves narrow, hairy at the throat: spike nodding, compound: leafets of the calyx acuminate-awned, about as long as the roundish capsule. 3 i. Oryza.

10—5. LYCHNIS. 22. 82.

apetala, (A. 2f.) calyx inflated: corol shorter than the calyx: stem about 1-flowered.
alpina, W. (E. r. 2f.) glabrous: flowers in dense umbelled heads: petals 2-cleft: styles 4. Labrador.

Exotic.

chalcedonica, (scarlet lichnis. r. J. 2f.) flowers fascicled, level-top, or convex.
viscaria, (clammy lichnis. 2f.) stem geniculate, viscous: petals entire: capsule 5-celled.
flos-cuculi, (ragged robin. 2f.) petals torn: capsule 1-celled, roundish. Phytolacca.

(1) Juncus, L. & Mx.

4—1. Lycium. 28. 41.

Exotic.

barbarum, (matrimony vine. J. r. y. ♄.) stem angled: branches erect: leaves lanceolate, tapering to both ends: calyx mostly 3-cleft.

Southern.

carolinianum, Wr. (L. p. Ju. ♄.) unarmed: leaves clustered, narrow-wedge-form, fleshy: flowers 4-cleft, tetrandrous. 3—5 f. Centunculus.

21—6. Lycogala. 58. 1.

punctata, cespitose, round, punctate, sub-cinereous.

miniata, gregarious, globose, at first scarlet; at length dark-yellow, with rose-coloured dust. Frequent on trunks in summer and autumn after a storm. Fuligo.

21—6. Lycoperdon. 58. 1.

bovista, (common puff-ball. O.) at first white and obconic, becoming black and spherical: outer coat downy, which pealing off leaves the leathery inner coat: seeds black, lighter than air, and appearing like smoke. In meadows.

giganteum, almost stipeless, globose, large; from white becoming pale: scales scattered, sub-obsolete. In grassy situations in autumn.

pratense, white, soft: fruit hemispheric, smoothish; having small warts: stipe very short. In meadows, and on grassy hills, in the summer.

excipuliforme, large, white, various: fruit sub-globose, with scattered spinose warts: stem sub-terete, long, plicate. Scattered on the earth in autumn, in pine woods, &c.

umbrinum, turbinate, somewhat bossed: at first cinereous, at length dark brown; rough with slender warts. Gregarious in pine woods in autumn.

pyriforme, dirty brownish-white; an inch and an half high: base tapering: top pointed: scales thin: roots fibrous, long. On putrid trunks. Scleroderma.

21—1. Lycopodium. 55. 5.

1. *Spikes peduncled.*

clavatum, (club-moss. O. g. Ju.) stem creeping: branches ascending: leaves scattered, incurve-bristle-bearing, serrate: spikes in pairs or single, peduncled, cylindric: scales ovate, acuminate, erose-dentate. Woods.

complanatum, (ground-pine. E. g-y. Ju. 2f.) creeping, erectish: branches alternate, dichotomous: leaves bifareous, connate, spreading at the tips: spikes in pairs, peduncled. Woods. *S.*

carolinianum, W. (E. Ju. 2f.) stem creeping: leaves somewhat 2-ranked, spreading, lanceolate: peduncles erect, solitary, elongated, 1-spiked: bracts sub-lanceolate. *S.*

sabinaefolium, W. (1) (W. Ju. 2f.) stem erect: branches alternate, dichotomous: leaves lanceolate, acute, pointing 4 ways, appressed, convex: peduncles solitary, 1-spiked: spikes terete: scales sub-cordate, acuminate.

2. *Spikes sessile: leaves surrounding the stem.*

dendroideum, Mx. (tree-weed. E. g. Ju. 2f.) erect: branches erect: leaves in six equal rows: spikes solitary, numerous. Woods. *S.*

obscurum, (E. Ju. 2f.) erect: branches spreading: leaves in six unequal rows: spikes one or few, solitary.

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(1) Alpinum, Mx.

annotinum, W. (E. Ju. 2f) stem creeping: branches twice 2-parted, ascending: leaves pointing 5 ways, lance-linear, mucronate, spreading and serrulate near the tips: spike solitary, terminal.

inundatum, W. (E. Ju. 2f.) stem creeping, sub-ramose; branches simple, solitary, erect, 1-spiked at the top: spike leafy: leaves linear, scattered, acute, entire, curved above.

alopecuroides, W. (E Ju. 2f.) stem creeping, sub-ramose: branches simple, long ascending, 1-spiked at the top: leaves linear-subulate, ciliate-toothed at the base, spreading: spike leafy. *S.*

selaginoides, W. (E. Ju. 2f.) stem creeping: branches simple, ascending: leaves scattered, lanceolate, spreading, ciliate-toothed: spikes solitary, terminal, leafy. *S.*

rupestre, (festoon pine. E. Ju. 2f) stem creeping, branching: branches subdivided, ascending: leaves scattered, lance-linear, ciliate, with hairs at the apex: spikes solitary, terminal. Rocks and gravelly banks.

3. *Spikes sessile: leaves 2-ranked.*

albidulum, W. (Au. 2f.) leaves ovate, acute, denticulate, alternate, close-pressed: spikes terminal, long, 4-sided. *S.*

apodum, W. (Ju. 2f.) leaves round-ovate, acute, flat, denticulate: with superficial alternating points: stem branching, rooting near the base: spike terminal, sub-solitary.

4. *Capsules axillary.*

lucidulum, Mx. (1) (moon-fruit pine. O. M. y. 2f.) stems assurgent, with a few longish branches: leaves spreading, shining, lance-linear, serrate, about in 8 rows.

selago, (A.) leaves scattered, entire, lanceolate, awnless, in 8 equal rows: stems dichotomous, erect, fastigiate.

Southern.

tristachyum, Ph. (A. Ju. 2f.) stems erect: branches alternate, dichotomous, sub-compressed: leaves lanceolate, acute, appressed, pointing 4 ways: peduncles solitary, elongated, 3-spiked: spikes terete: scales roundish, acuminate. Equisetum.

5—1. Lycopsis. 41. 42.

arvensis, (E. b. Ju. ☼.) hispid: leaves lanceolate, repand-toothed: racemes in pairs: flowers sessile. Probably introduced. *S.*

virginica, (E. w. J. ☼.) small, hispid: lower leaves spatulate: upper ones linear-oblong, entire: racemes solitary: flowers peduncled. *S.*
Batschia.

2—1. Lycopus. 42. 39.

europæus, (2) (water horehound. w. Ju. 2f.) lower leaves gashed; upper ones lanceolate, serrate: calyx acuminate-spined. Flowers small, whorled. Damp. 1—3 f. *S.*

virginicus, (bugle weed. O. w. J. 2f.) leaves broad-lanceolate, serrate, at the base narrowed and entire: calyx very short, spineless. Var. *quercifolius*, leaves sinuate-pinnatifid. Damp. 2 f. *S.*

uniflorus, Mx. (3) (w. J. 2f.) leaves lanceolate, sub-serrate, glabrous: suckers procumbent. A low plant, with flowers mostly solitary.

obtusifolius, Vahl. (Hudson's Bay. 2f.) leaves lanceolate, remotely and obtusely serrate. Monarda.

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(1) reflexum, Sh. (2) angustifolius and sinuatus, E. exaltatus, Ph. vulgaris, P. americanus, M. (3) pumilus, Vahl.

22—1. Lygodium. 55. 5.

palmatum, Sz. (1) (climbing fern. E. g-y. Au. 2f.) stem climbing: leaves palmate, 5-lobed; divisions lanceolate, obtuse: spikelets terminal, compound-panicled. 3—4 f. *S.* Equisetum.

Lyonia, Andromeda, Cynanchum.

5—1. Lysimachia. 20. 34.

stricta, A. (2) (loose strife. O. y. Ju. 2f.) raceme terminal, very long, lax: leaves opposite, lanceolate, sessile: petals lanceolate, spreading. 1—2 f. *S.*

thyrsiflora, (3) (O. y. J. 2f.) stem simple, smooth: leaves sessile, lanceolate, opposite, acute, paler beneath: racemes lateral, long peduncled. 12—18 i.

quadrifolia, (4) (O. y. J. 2f.) pubescent: leaves sub-sessile, oval, acuminate, punctate, whorled, or in nearly opposite pairs, with axillary, 1-flowered peduncles: divisions of the corol oval, entire. Leaves vary from opposite, to seven in a whorl. 12—18 i. *S.*

ciliata, (O. y. J. 2f.) sub-pubescent: leaves opposite, long-petioled, sub-cordate-oval; petioles ciliate: pedicels somewhat in pairs: flowers nodding. 2—4 f. *S.*

hybrida, Mx. (5) (E. y. J. 2f.) glabrous: leaves opposite, petioled, lanceolate, acute at both ends; petioles ciliate: flowers nodding: corol shorter than the calyx; divisions crenulate.

revoluta, N. (O. y. J. 2f.) smooth: stem 4-sided, simple: leaves linear, sessile, tapering to both ends; margin revolute: peduncles solitary: divisions of the calyx lanceolate, very acute: segments of the corol round-oval, abruptly acuminate. 6—18 i.

quadriflora, Sims. (6) (W. 2f.) branching: stem smooth: leaves sessile, opposite, very long linear: peduncles in fours, sub-terminal, 1-flowered. 2—3 f. *S.*

Southern.

herbemonti, E. (E. 2f.) flowers in terminal racemes; lower ones whorled; upper ones scattered: leaves in fours, lance-ovate, sessile, 3-nerved. 2 f.

lanceolata, Ph. (E. 2f.) very glabrous, erect, simple: leaves in fours, sub-petioled, lanceolate, prominently acuminate: peduncles in fours, many-flowered: upper flowers racemed: divisions of the corol ovate, acute.

heterophylla, Mx. (E. Ju. 2f.) stem erect, glabrous, branching: lower leaves roundish; upper ones linear, sessile: flowers axillary, nodding: peduncles shorter than the leaves. 12—18 i.

angustifolia, Mx. (E. y. 2f.) very glabrous, branching: leaves opposite and whorled, long-linear, punctate: racemes terminal, short: divisions of the corol oblong. Primula.

11—1. Lythrum. 17. 91.

salicaria, var. *pubescens*, Ph. (milk willow-herb. E. p. Ju. 2f.) pubescent: leaves opposite and in threes, sessile, lanceolate, cordate at the base: flowers terminal, whorled-spiked: capsules oblong: stamens 12. 2 f.

verticillatum, (7) (swamp willow-herb, grass poley. O. p. Au. 2f.) pubescent: leaves opposite, or in threes, lanceolate, petioled: flowers axillary, somewhat in whorls: fruit globose: stamens 10. Wet. 2 f. *S.*

hyssopifolium, N. (St. Clair, Detroit. w. p. 2f.) leaves alternate and opposite, lance-linear and sub-oval: flowers solitary, axillary. Hexandrous. 6—10 i.

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(1) Hydroglossum, W. Ophioglossum, L. Cteisium paniculatum, Mx. (2) bulbifera, C. racemosa, Lk. (3) capitata, Ph. (4) heterophylla, N. angustifolia, W. (5) hirsuta, Mx. punctata, Wr. (6) longifolia, Ph. (7) Anonymos aquatica, Wr. Decodon aquaticum, Gmel. verticillatum, E.

Southern.

virgatum, W. (E. p. Ju. 2f.) leaves opposite, lanceolate, glabrous: stem paniced: flowers axillary, in threes, pedicelled: stamens 12.

alatum, Ph. (O. p. Ju. 2f.) very glabrous: stem winged: leaves opposite and alternate, closely sessile, sub-cordate, ovate-oblong: flowers hexandrous, axillary, solitary, sessile. 2—3 f.

lineare, W. (E. w. Ju. 2f.) glabrous, virgate-panicled: leaves linear, somewhat opposite: flowers axillary, solitary, hexandrous. 3—4 f. Cuphea.

M.

13—1. MACBRIDEA. 42. 39.

Southern.

pulchra, E. (E. p. & w. Au. 2f.) stem erect, simple: leaves opposite, lanceolate, acute, serrulate, punctate, ciliate, glabrous beneath, somewhat hairy above; upper ones sessile; lower ones attenuated at the base as if petioled. 12—18 i. Calamintha.

20—4. MACLURA. 53. 98.

Southern.

aurantiaca, N. (W. ♄.) leaves petioled, oval, acuminate, very entire, sub-mucronate, smooth and shining above; petiole and nerves minutely hirsute-pubescent beneath: fruit axillary, sub-sessile, surface verracose. 20—30 f. Broussonetia.

13—1. MACROTYS, R. 26. 61.

racemosa, (1) (bug-bane, black snake-root, cohosh. O. w. Ju. 2f.) leaves decompound; leafets oblong-ovate, gash-toothed: racemes in wand-like spikes: capsules ovate. Woods. 3—9 f. *S.*

fœtida, W. (W. Ju. 2f.) leaves decompound; leafets ovate, gash-toothed; teeth acute: raceme panicled, nodding: styles 5: capsule ovate, uncinate.

*Southern.**

podocarpa, Dc. (2) (A. S. 2f.) germs 4—5, pedicelled, glabrous: racemes panicled: leaves decompound; leafets of the calyx ovate, concave. 2 f.

cordifolia, Ph. (2) (A. Ju. 2f.) germs 2—3, (2—5, Ph.) glabrous, sessile: racemes panicled: leaves biternate; leafets 5—7-lobed, serrate, cordate at the base.

palmata, Mx. (2) (A. Ju. 2f.) germs numerous, (12—15:) panicle dichotomous, sub-corymbed: capsules very short, forming globular heads: leaves simple, palmate. 2—3 f. Sarracenia.

12—13. MAGNOLIA. 52. 75.

glauca, (beaver tree, swamp laurel. E. w. J. ♄.) leaves oval, glaucous beneath: petals obovate, tapering to the base. Var. *latifolia*, has obtusish, deciduous leaves. Var. *longifolia*, has perennial leaves acute at both ends. *S.*

acuminata, Mx. (cucumber tree. W. b-y. J. ♄.) leaves oval, acuminate, pubescent beneath: petals obovate, obtusish. 70 f. *S.*

tripetala, W. (3) (umbrella tree. w. J. ♄.) leaves large, wedge-obovate, acute; in the young state all over silky: petals 9, oval, acute; outer ones reflexed. 25—35 f. *S.*

Southern.

grandiflora, W. (big laurel, magnolia. O. w. M. ♄.) leaves evergreen, oval

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(1) Cimicifuga serpentaria, Ph. Actæa, L. (2) Actea, Dc. Cimicifuga, E. (3) umbrella, Lk.

* Belong to Cimicifuga, see Addenda.

thick, leathery: petals broad-obovate, abruptly narrowed into a claw. Var. *elliptica*, leaves oblong-oval, ferruginous beneath: flowers somewhat contracted. Var. *obovata*, leaves oblong-obovate: flowers expanded. Var. *lanceolata*, leaves oblong-lanceolate, curved at the apex, both sides coloured alike: flowers somewhat contracted. 60—80 f.

macrophylla, Mx. (O. w. J. ♄.) branches fragile: leaves very large, oblong, sub-cuneate-obovate, sinuate and auricled at the base, glaucous beneath: petals 6, ovate, obtuse. 30—35 f.

cordata, Mx. (A. y. M. ♄.) leaves broad-oval or lance-ovate, sub-cordate, sub-tomentose beneath: petals lance-oblong, acute. 20—40 f.

auriculata, W. (A. y-w. M. ♄.) leaves large, lance-obovate, acute, glaucous beneath, cordate and auricled at the base; lobes approximate: petals ovate, acute, sub-unguiculate. 30—40 f.

pyramidata, Bartram. (E. Ap. ♄) leaves rhomb-oboval, abruptly acute, both sides coloured alike, sub-cordate and auricled at the base: lobes divaricate: petals lanceolate, gradually acute. Liriodendron.

Mahonia, BERBERIS.

18—1. MALAXIS. 7. 21.

liliifolia, (1) (twayblade. O. w. y. p. J. 2ℓ.) leaves 2, lance-ovate or oval: scape 3-cornered: inner petals filiform, reflexed, 2-coloured: lip concave, obovate, mucronate. 4—8 i. *S.*

longifolia, B. (2) (E. y-g. J. 2ℓ. bulb roundish: scape 2-leaved: leaves broad-lanceolate, longer than the scape: spike oblong: lip cordate, concave, channelled, shorter than the petals. 3—7 i. Microstylis.

Malaxis, MICROSTYLIS.

15—12. MALOPE. 37. 74.

Southern.

malacoides, (E. y. ☼.) leaves oblong, obtuse, entire, crenate, glabrous above: peduncles solitary, axillary. 12—18 i. Stuartia.

Malus, PYRUS.

15—13. MALVA. 37. 74.

americana, M. (rough mallows. y. J. ☼.) leaves ovate, acute, toothed, scabrous: flowers axillary, solitary, terminal, head-spiked.

rotundifolia, (low mallows. O. r. w. J. 2ℓ.) leaves heart-orbicular, obsoletely 5-lobed: peduncles bearing the fruit declined: stem prostrate. Probably introduced.

Exotic.

sylvestris, (mallows. r-b. J. ♂. and 2ℓ.) stem erect: leaves about 7-lobed, acutish: peduncles and petioles hairy.

crispa, (curled mallows. Au. ☼.) stem erect: leaves angular, crisped: flowers axillary, glomerate.

moschata, (musk mallows. 2ℓ.) stem erect: radical leaves reniform, gashed; cauline ones 5-parted, pinnate, many-cleft: leafets of the outer calyx linear. Naturalized.

virgata, (whip-stalk mallows. r. 2ℓ. and ♄.) leaves deeply 3-lobed, toothed, wedge-form at the base: peduncles in pairs, longer than the petiole.

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(1) Ophrys, L. (2) correana, B.

Southern.

abutiloides, (E. p. Ju. 2[.) leaves with 5 angular lobes, tomentose: peduncles 2-cleft, about 4-flowered, axillary: capsules many-seeded.

caroliniana, W. (E. r. Au. ☼.) leaves 5-lobed or palmate, gash-toothed: peduncles longer than the petioles: petals entire: fruit villose: stem prostrate.

triloba, (1) (E. ♄.) leaves oblong, very obtusely 3-lobed, toothed, tomentose: peduncles axillary, longer than the petiole.

coccinea, N. (2) (W. r. Au. 2[.) all over hoary-tomentose, and strewed with stellate hairs: leaves 3—5-cleft; divisions gashed, acute: racemes terminal: stem diffuse.

triangulata, (3) (E. p. Ju.) hirsute, sub-decumbent: lower leaves triangular-cordate; upper ones 3—5-lobed, irregularly toothed: flowers racemed. 12—18 i. Hibiscus.

3—2. MANISURUS. 4. 10.

Southern.

granularis, (E. S. ☼. ?) calyx of the globose fertile floret verrucose, tessellated: stem erect, branching: sheaths hirsute. 2—3 f. Lepturus.

3—1. MAPANIA. 3. 9.

Southern.

sylvatica, (W. Ju. 2[.) culm at the base covered with imbricate, lanceolate leaves or scales. Fimbristylis.

21—3. MARCHANTIA. 57. 3.

polymorpha, L. (brook liverwort. O. g-y. Ju. 2[.) pistillate receptacles radiated; staminate ones peduncled, peltate: fronds crowded together, lobed, nerved, and covered with small decussate veins. Pistillate peduncles very long: nerves of the frond generally brown. On earth and stones in wet or damp places.

hirsuta, Sw. (Nov.) pistillate receptacles hemispherical, sub-entire, margin hirsute; staminate ones sessile, roundish, plano-convex: fronds very broad, brittle, simple or dichotomous at the apex; margin undulate. Dark green: fronds generally dichotomus, and lobed; lobes rounded, undulate, and often crenate: 2—3 inches long, and 1 wide: pistillate peduncle short.

hemisphaerica, L. pistillate receptacles sub-hemispherical, nearly entire, sub-4-sided; divisions of the proper calyx obtuse: fronds smaller, crenate; beneath dark red; above beautifully green. On rocky ground.

conica, L. pistillate receptacles conic-ovate, somewhat angular; staminate ones sessile: fronds long, creeping, verrucose, sinuate. On moist banks, walls, stones, &c.

crinita, Mx. (Summer.) small: margin of the frond coloured, erose-crenate: lobes roundish: pistillate receptacles sub-globose, 5-lobed; with long filaments proceeding from between them: margin, and lower surface of the frond purple. On flat rocks.

tenella, small: frond fork-dichotomous, narrow: pistillate receptacles sub-conic, with a many-cleft membrane below; divisions ligulate-linear: peduncles longish, delicate. Receptacles 3-cleft; divisions rounded. Frond green; beneath purple. Jungermannia.

3—1. MARISCUS. (4) 3. 9.

retrofractus, (E. Ju. 2[.) umbel simple; rays long: spikes obovate, imbricate

(1) retusa, W. (2) Cristaria, Ph. (3) M. C. Leavenworth. retusa, W.? (4) Scirpus, L.

backwards : spikelets subulate, at length bent backwards : involucre 3-leaved. 18 i. *S.*

echinatus, (1) (E. Ju. 2f.) umbel simple ; rays short : spikes globose : flowers spreading. Var. *tenellus*, T. (L.) culm acutely triangular, slender : involucre 3—5-leaved ; 3 of the leaves many times longer than the umbel. 6—18 i. *S.*

Southern.

cylindricus, E. (E. Ju.) stem obtusely 3-angled, glabrous : umbels simple ; heads cylindric : spikes lanceolate, sub-compressed, few-flowered (2—5.) expanding. 2—3 f. Dulichium.

Mariscus, CYPERUS.

13—1. MARRUBIUM. 42. 39.

vulgare, (horehound. O. w. Ju. 2f.) leaves round-ovate, toothed, rugose-veined : calyx toothed, setaceous, uncinate. Itroduced. *S.* Glechoma.

17—1. MARSHALLIA. (2) 49. 55.

Southern.

lanceolata, Mx. (E. p. M. 2f.) stem simple, naked near the summit, leafy below : radical leaves obovate ; cauline ones long-lanceolate : scales of the calyx oval : chaff spatulate. 18—24 i.

latifolia, Mx. (A. 2f.) stem simple : leaves lance-oblong, acuminate, 3-nerved ; lowest ones sheathing : scales of the calyx acute : chaff of the receptacles narrow-linear.

angustifolia, Mx. (E. p. Ju. 2f.) stem branching : lower leaves narrow-lanceolate ; upper ones linear : scales of the calyx rigid, subulate : chaff linear. Var. *cyananthera*, E. stem simple, very pubescent near the top : leaves lance-linear, 3-nerved : scales of the calyx lanceolate, acuminate. 2 f. Santolina.

13—2. MARTYNIA. 40. 45.

proboscidea, W. (3) (unicorn plant. w. p. y. Ju. ☼.) stem branching : leaves alternate, cordate, entire, villose. Fruit somewhat gourd-like, with one long horn. 1—2 f. *S.* Sesanum.

17—2. MATRICARIA. 49 55.

Exotic.

chamomilla, W. (wild chamomile. ☼.) leaves bipinnate : scales of the calyx obtusish.

12—1. MECONOPSIS. 27. 62.

diphylla, Mx. (4) (W. M. 2f.) stem with two twin leaves near the summit : leaves sessile, lobe-pinnatifid : peduncle solitary, 1-flowered : capsule oblong-ovate. *S.*

Southern.

petiolatum, N. (5) (W. y. J. 2f.) stem 4-sided : leaves very broad, long petioled, pinnatifid-lobed ; lobes 5—7, angularly and incisely toothed. 12—18 i. Argemone.

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(1) ovularis, Vahl. Kyllingia ovularis, Mx. (2) Persoonia, Mx. Trattenickia. P. (3) annua, L. alternifolia, Lk. (4) Chelidonium, Mx. Hytophorum, N. (5) Stylophorum, N.

16—10 Medicago. 32. 93.

lupulina, (hop medick. O. y. J. ☼.) spikes oval: legumes reniform, 1-seeded: stipules entire: leaves obovate: stem procumbent. *S.*

Exotic.

intertexta, (y. Au.) peduncles somewhat 2-flowered: legumes spiral, oval: prickles pubescent, setaceous, 2-ranked, appressed: stipules ciliate-toothed: leafets obovate, dentate. Naturalized.

sativa, (lucerne medick. Ju. 2[.) peduncles racemed: legume smooth, cochleate: stipules entire: leaves oblong, toothed. Naturalized.

tribuloides, (hedge-hog. ☼.) peduncles 2-flowered: legume cochleate, cylindric, flat both sides, aculeate, conic 2-ways, reflexed: stipules toothed: leaves toothed, obovate.

scutellata, (snail-shell, bee-hive. E. Ju. ☼.) peduncles about 2-flowered: legumes unarmed, cochleate in an orbicular form, with a convex base and a flat top: stipules toothed: leaves oblong, toothed. Colutea.

Mediola, Gyromia.

21—2. Meesia. 56. 4.

uliginosa, stem simple, short: leaves oblong-linear, obtuse: capsule pear-form; lid convex. In marshes. Diphysicum.

14—2. Melampyrum. 40. 35.

americanum, Mx. (1) (cow-wheat. O. y. Ju. ☼.) slender: lower leaves linear, entire; floral ones lanceolate, toothed behind: flowers axillary, distinct. Var. *latifolium*, has very broad leaves. Woods. *S.*

brachiatum, Sz. & Say. (W.) stem terete, sub-scabrous, naked below, with long, naked, ascending, opposite or whorled branches: leaves entire, rugose and scabrous on both sides, attenuated into the petiole. 6—8 i. Euphrasia.

6—3. Melanthium. 10. 13.

virginicum, W. (2) (black flower. E. w. becoming black. J. 2[.) panicle pyramid-form: petals oval, sub-hastate, flat, with 2 spots: flowers mostly perfect. 2—3 f. *S.*

hybridum, Wr. (3) (bunch flower. w. J. 2[.) panicles racemed above, pistillate: petals roundish, having claws, undulate-plaited, hardly spotted, hirsute outside. 2 f. *S.*

glaucum, N. (O. g-w. Ju.) root bulbous: leaves glaucous, margined: raceme mostly simple, few-flowered: petals roundish, unguiculate, with two peculiar spots: seed subulate, alated.

Southern.

monoicum, Wr. (A. Ju. 2[.) panicle with the lower flowers staminate; upper ones pistillate and racemed: petals oblong, flat, with short claws: styles half as long as the germ. Zigadenus.

17—1. Melananthera. 49. 55.

Southern.

hastata, Mx. (4) (E. w. S. 2[.) leaves hastate, 3-lobed; chaff of the receptacle lanceolate, acuminate. Var. *lobata*, leaves deeply 3-lobed. Var. *panduràta*, leaves slightly 3-lobed, panduriform. 4—6 f. Marshallia.

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(1) lineare, Lk. (2) Helonias virginica, Bot. Mag. (3) latifol'um, Lk. racemosum, Mx. (4) Bidens nivea, W. Athanasia, Wr.

10—1. Melia. 54. 71.

Southern.

azedaraeh, (bead tree. E. ♄.) leaves doubly-pinnate: leafets smooth, ovate, toothed. 30—40 f. Tribulus.

3—2. Melica. 4. 10.

speciosa, M. (7) (melic grass. J. 2ℓ.) smooth: panicle loose, erect, few-flowered: branches simple: florets obtuse. 3—4 f. *S.*

Southern.

diffusa, Ph. (E. J. 2ℓ.) panicle diffuse, very branching: flowers acute, beardless; stem erect, pubescent. Atheropogon.

16—10. Melilotus. (1) 32. 93.

vulgaris, (2) (yellow melilot-clover. y. J. ☼.) stem erect: leafets oblanceolate, mucronately serrulate: banner and wings *equal** : racemes axillary sub-panicled; the longest raceme 3 to 5 times as long as the longest leafet at its base: legumes oval. 2 to 4 f. Unquestionably indiginous from Glenn's Falls on the Hudson river, to the Highlands. *S.*

alba, (3) (white melilot-clover. w. J. ☼.) stem erect: leafets variable (oval, ovate, obovate, and oblanceolate) mucronately serrulate: banner *longer** than the wings: racemes axillary, panicled; the longest raceme 6 to 10 times as long as the longest leafet at its base: legumes oval. 3 to 6 f. Flowers and legumes smaller than the preceding species and the stem more robust. Probably introduced; but now very common and growing wild. Both species sweet scented. *S.* Trifolium.

Melilotus, Psoralea.

13—1. Melissa. 42. 39.

Exotic.

officinalis, (balm. w. b. Ju. 2ℓ.) flowers whorled half way around, sub-sessile; bracts oblong, pedicelled: leaves ovate, acute, serrate. Naturalized. Ocymum.

19—16. Melothria. 34. 97.

pendula, (creeping cucumber. y. J. ☼.) leaves sub-reniform, lobe-angled; terminal lobe equalling the rest: berry cylindric, ovate. *S.* Momordica.

20—13. Menispermum. 11. 77.

canadense, (moonseed. O. w-y. Ju. ♄.) stem climbing: leaves sub-cordate, round-angled, peltate, with the petiole near the base: racemes compound: petals 8. Var. *lobatum*, Ph. (4) leaves lobed. *S.*

Southern.

smilacium, W. (5) (E. y. Ju. ♄.) leaves peltate, sub-glabrous, cordate, roundish, obtusely angled, glaucous beneath: racemes generally simple: petals 4.

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(1) Trifolium, L. (2) officinalis? (3) var. alba? I adopt the genuine names of old authors; because the descriptions of modern authors are either very deficient, or they did not have our plants before them. Whereas the figures and descriptions of the older authors show, that they were acquainted with both of our species, which they called by those names. See Parkinson, p. 718. London Ed. A. D. 1640. (4) M. virginicum, W. (5) Cissampelos, W. (7) glabra, Mx.

* Suggested by H. H. E.

lyoni, Ph. (W. Ju. 2f.) leaves cordate, palmate-lobed, very long petioled: racemes simple: petals 6: stamens 12. Datisca.

13—1 MENTHA. 42. 39.

tenuis, Mx. (1) (O. w. J. 2f.) glabrous: leaves lance-ovate, serrulate, petioled: spike slender, terminal, with small interrupted whorls: stamens not exsert. 1—2 f. *S.* American spear-mint.

canadensis, W. (w-p. Au. 2f.) flowers whorled: leaves lanceolate, serrate, petioled, pilose: stamens equalling the corol. 12 i.

borealis, Mx. (northern mint. O. w. Ju. 2f.) ascending, pubescent: leaves petioled, lance-oval, acute at both ends; flowers whorled: stamens exsert. Damp. 9—18 i. *S.*

Exotic.

piperita, (peppermint. p. Au. 2f.) spikes obtuse, interrupted below: leaves subovate, somewhat glabrous, petioled: stem glabrous at the base. Naturalized. 1—2 f.

arvensis, (field mint. p. Ju.) hairy, branching: leaves ovate: flowers whorled calyx bell-form. Naturalized. 1 f.

viridis, (spear-mint. p. Au.) leaves lanceolate, sessile: spikes elongated, interrupted: stamens long. 1—2 f. Isanthus.

11—1. MENTZELIA. 17. 88.

Southern.

aurea, N. (W. y.) stem dichotomous: leaves lance-ovate, deeply angular-crenate: flowers sessile; petals oval, acuminate, entire: capsule about 3-seeded. Very rough and tenacious. 12 i.

oligosperma, N. (W.) decumbent: flowers large. Decumaria.

5—1. MENYANTHES. 47. 46.

trifoliata, (buck-bean. O. r. J. 2f.) leaves ternate: corols densely bearded above. In stagnant waters. *S.* Villarsia.

Menyanthes, VILLARSIA.

8—1. MENZIESIA. 18. 50.

cœrulea, W. (2) (mountain heath. A. r. Ju. ♄.) leaves scattered, crowded, linear, obtuse, cartilaginous-toothed: peduncles terminal, aggregate, 1-flowered: flowers bell-form: calyx acute. Decandrous. Very small.

globularis, Sy. (A. J. ♄.) leaves lanceolate, glaucous beneath, except the nerves, pubescent: calyx 4-cleft: flowers globose, octandrous. 2—4 f. *S.*

empetriformis, S. (W. r. Ju. ♄.) leaves linear, serrulate, concave beneath: peduncles terminal, aggregate: flowers bell-form: calyx obtuse. Decandrous.

Southern.

ferruginea, W. (W. J. ♄.) leaves lance-obovate, glabrous beneath except the nerves: calyx somewhat 4-cleft: flowers urceolate, octandrous. Acer.

21—6. MERISME. 58. 1.

fœtida, fuscous-purple: branches palmate, approximate; white and shining at the apex. On the earth in woods. Clavaria.

21—6. MERULIUS. 58. 1.

1. *Pileus entire: stipe central.*

cantharellus, in groups, all reddish-yellow: pileus fleshy, glabrous depressed.

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(1) viridis, Wr. (2) Andromeda taxifolia, Pallas. Erica, W. Phyllodoce taxifolia, Sy.

cornucopoides, cespitose, becoming black: pileus membranaceous, scaly: veins obsolete. In woods in autumn.

2. *Effuse, stemless.*

serpens, coriaceous, elongated, glabrous, white becoming red in the middle: folds or veins sub-obsolete, and resembling wrinkles. Dedalea.

11—5. MESEMBRYANTHEMUM. 13. 87.

Exotic.

crystallinum, (ice plant. w. Au. ☉.) branching: leaves alternate, ovate, papillose: flowers sessile: calyx broad-ovate, acute, retuse. Fothergilla.

21—6. MESENTERICA. 58. 1.

lutea, orange or gold colour.

11—5. MESPILUS. 36. 93.

Exotic.

germanica, (medlar. ♄.) leaves lance-ovate, downy beneath: flowers sessile, solitary. Mesembryanthemum.

2—1. MICRANTHEMUM. 20. 34.

Southern.

orbiculatum, Mx. (E. w. Au. 2ſ.) stem prostrate, terete: leaves orbicular, abruptly narrowed at the base: flowers peduncled. Wet ditches.

emarginatum, E. (E. w. Au. 2ſ.) leaves oval and obovate, emarginate: flowers sessile. Wet. Lycopus.

10—4. MICROPETALUM. 22. 82.

lanceolatum, Mx. (1) (blind starwort. A. Ju. 2ſ.) glabrous: leaves lanceolate, narrow at both ends: flowers panicled: petals ovate, very short or wanting. Damp. 6—8 i.

longifolia, M. (2) (long-leaf starwort. O. w. J. 2ſ.) stem decumbent, or subdecumbent, leaves lance-linear, opposite, entire, smooth: panicle terminal: calyx 3-nerved, about equalling the petals. 12—18 i. *S.*

Southern.

lanuginosum, Mx. (A. Ju. 2ſ.) dense-pubescent: leaves lanceolate, tapering into the petiole: peduncles sub-solitary, elongated, at last reflected: flowers without petals. Spergula.

18—1. MICROSTYLIS. 7. 21.

ophioglossoides, W. (3) (adder mouth. E. g-w. J. 2ſ.) leaf solitary, ovate, clasping: scape 5-angled: lip cleft at the tip. 6—9 i. *S.* Corallorhiza.

3—1. MIEGIA. (4) 4. 10.

Southern.

macrosperma, Mx. (cane. O. Ap. 2ſ.) stem terete, glabrous, hollow, rigid: leaves distichous, lanceolate, flat, sub-acuminate, pubescent beneath. 3—15 f. Var. *gigantea*, much taller. 30—40 f. Eriocoma.

17—1. MIKANIA. 49. 55.

scandens, (5) (climbing thorough-wort. E. w. Au. 2ſ.) stem glabrous climb-

(1) Stellaria, T. Spergulastrum, Mx. (2) gramineum, Ph. Stellaria, M. (3) Malaxis, W. unifolia, M. (4) Arundinaria, Mx. (5) Eupatorium, L.

ing: leaves cordate, repand-toothed, acuminate; lobes divaricate, unequal: flowers corymbed. Damp or wet. *S.*

pubescens, M. (w-p. Au. 2f.) pubescent: stem climbing: leaves cordate, repand-toothed, angled at the base; acuminate: calyx 4-flowered. *S.* Chrysocoma.

3—2. Milium. 4. 10.

effusum, (millet. E. 2f.) panicle diffuse, compound: branches horizontal: glumes ovate, very obtuse: corol awnless, smooth and shining: leaves broad-linear. 5—8 f.

amphicarpon, Ph. (1) (millet grass. E. Au. 2f.) leaves lance-linear, hairy, ciliate: panicle simple, contracted, bearing perfect flowers: fertile flowers in solitary, elongated, radical scapes, at length subterraneous. 18—24 i.

pungens, T. (E. M. 2f.) culm erect: leaves lanceolate, very short, pungent, at length involute: panicle contracted; branches generally in pairs, 2-flowered; flowers awnless, ovate: corol hairy. 12—18 i.

Exotic.

nigricans, (African millet.) flowers panicled, crowded: valves of the calyx shining, becoming black: leaves ensiform, very long. Piptatherum.

Milium, Piptatherum.

Mimosa, Acacia. Schrankia.

13—2. Mimulus. 40. 40.

ringens, (monkey-flower. O. b. Ju. 2f.) erect, glabrous: leaves sessile, lanceolate, acuminate, serrate: peduncles axillary, opposite, longer than the flower: teeth of the calyx acuminate. 1—2 f. *S.*

alatus, (O. b. Ju. 2f.) erect, glabrous: leaves petioled, ovate, acuminate, serrate: peduncles axillary, opposite, shorter than the flower: stem winged at the 4 corners: teeth of the calyx round-mucronate. 1—3 f. *S.*

luteus, W. (W. y. Ju. 2f.) erect glabrous, stoloniferous: leaves roundish-ovate, nerved, toothed; lower ones obtuse, petioled; upper ones acute, closely sessile: raceme terminal: peduncles axillary, opposite, elongated: calyx unequal; teeth acutish.

Southern.

lewisii, Ph. (W. p. Au. 2f.) erect, small, pubescent: leaves sessile, lance-oblong, acute, nerved, mucronate-denticulate: flowers few, terminal, very long peduncled: teeth of the calyx acuminate. 6—8 i. Chelone.

5—1. Mirabilis. 54. 32.

Exotic.

dichotoma, (mexican four o'clock. 2f.) flowers sessile, axillary, erect, solitary.

jalapa, (four o'clock. r. y. Ju. 2f.) flowers heaped, peduncled: leaves glabrous.

longiflora, (w. Au. 2f.) flowers crowded, very long, a little nodding: leaves sub-villose. Itea.

4—1. Mitchella. 48. 57.

repens, (patridge berry, checker berry. O. w. J. 2f.) stem creeping: leaves roundish, petioled, opposite. Woods. *S.* Linnea.

10—2. Mitella. 13. 84.

diphylla, W. (currant leaf. O. w. Ap. 2f.) leaves cordate, sub-lobate, dentate scape 2-leaved: leaves opposite. Woods. 1—2 f.

(1) ciliatum, M.

cordifolia, Lk. (O. w. M. 2[.) leaves round-reniform, doubly-crenate, with scattered hairs above: scape erect or prostrate, naked or 1-leaved. Var. *reniformis*, (1) leaves reniform, scape naked. Var. *prostrata*, (2) stems prostrate, leafy. 6—8 i. *S.*

grandiflora, Ph. (W. w. 2[.) very hirsute: leaves round-cordate, obtusely lobed, toothed: scape with one or more leaves: flowers pedicelled: calyx bell-form. Dianthus.

21—2. MNIUM. 56. 4.

hornum, leaves lance-ovate, serrate: peduncles curved: capsule ovate, pendulous: lid obtuse.

palustre, stem erect, elongated, branching: leaves lanceolate, keeled, acute: upper ones bent over to one side: capsule oblong, sub-erect: lid conic, acute. In damp woods and fens. Timmia.

3—3. MOLLUGO. 22. 82.

verticillata, (carpet weed. O. w. Ju. ☼.) stem sub-divided, prostrate: leaves in whorls, wedge-form, acute: peduncles 1-flowered. *S.* Lechea.

13—1. MOLUCELLA. 42. 39.

Exotic.

lævis, (molucca balm, shell-flower. w. g. Ju. ☼.) calyx campanulate, 5-toothed: teeth equal, awnless: leaves petioled, round-ovate, toothed. Calyx much longer and larger than the corol. Ajuga.

19—15. MOMORDICA. 34. 97.

echinata, (O. w. Au. ☼.) pomaceous: berry 4-seeded, roundish, setose-echinate: leaves cordate, 5-lobe-angled, acuminate, entire. Calyx 6-cleft: corol 6-parted.

Exotic.

balsamina, (balsam apple. S. ☼.) pomaceous: berry angled, tubercled: leaves glabrous, spreading, palmate. Sicyos.

2—1. MONARDA. 42. 39.

didyma, (3) (mountain mint. O. r. J. 2[.) leaves ovate, acuminate, sub-cordate, somewhat hairy: flowers in simple or proliferous heads: outer bracts large, coloured, lanceolate. Var. *angustifolia*, (4) leaves lance-ovate, acuminate, pubescent: stem pubescent. 18—24 i. *S.*

oblongata, A. (5) (b. r. Ju. 2[.) pubescent: head simple: outer bracts ovate: calyx short, bearded in the throat: teeth spreading: stem obtuse-angled, pubescent above: leaves lance-oblong, rounded at the base. 2—3 f. *S.*

clinopodia, (6) (y. p. Ju. 2[.) glabrous: heads small, simple, terminal: outer bracts broad-ovate, acute, entire, smoothish: calyx ciliate, short: corol pubescent, slender: leaves ovate-oblong, acuminate, serrate, a little hairy: stem obtuse-angled, glabrous. *S.*

fistulosa, (E. p. Ju. 2[.) hirsute, with scattered hairs: heads simple, proliferous, leafy: outer bracts oblong, acute, glabrous: calyx long, bearded: corol hirsute, of middling length: leaves ovate, acuminate, serrate: petioles long, ciliate: stem glabrous, obtuse-angled. 2 f. *S.*

punctata, (7) (E. y. J. 2[.) smoothish: flower middling size, whorled: bracts

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(1) nuda, W. (2) prostrata, Mx. (3) purpurea, Lk. coccinea, Mx. (4) kalmiana, Ph. (5) longifolia, Lk. allophylla, Mx. mollis, W. (6) glabra, Lk. (7) lutea, Mx.

lanceolate, coloured, longer than the whorls: leaves lance-oblong, remotely serrate: stem obtuse-angled, with whitish down. 2—3 f. *S.*

hirsuta, Ph. (1) (O. b. p. Au. ♃.) very hairy: flowers small, whorled: bracts attenuated into awns: upper teeth of the calyx very short, the rest bristle-form: leaves ovate, acuminate, long-petioled, serrate. 2—3 f. *S.*

beckii, Ea. (W. ♃.) stem rough, with stiff white hairs: leaves petioled, ovate-oblong and lanceolate, serrate, acutish, somewhat hairy: bracts ovate, glabrous, veiny, a little shorter than the 2-lipped calyx: upper teeth of the calyx subulate. Flowers small, in whorls. First discovered by Prof. L. C. Beck near St. Louis. Described by Torrey in the Annals of the N. Y. Lyceum.

ciliata, (p. Au. ♃.) hirsute: flowers small, whorled: bracts ovate, glabrous, veiny, ciliate, equalling the calyx: leaves ovate-oblong, tapering, sub-sessile, serrate, pubescent: stem acute-angled, hirsute. *S.*

rugosa, A. (A. w. Ju. ♃.) smoothish: heads simple, middling size: outer bracts ovate, undulate: calyx smoothish: leaves ovate, sub-cordate, acute, rugose; nerves beneath and petioles pilose: stem acute-angled, smoothish. 4 f.

Southern.

gracilis, Ph. (A. y-w.) very glabrous: heads lateral and terminal, small: outer bracts linear, ciliate: calyx pubescent-ciliate: corol short: leaves lance-linear, acuminate, serrate: stem obtusely angled, glabrous.

purpurea, Ph. (A. r. Ju. ♃.) somewhat glabrous: heads large, leafy: outer bracts large, coloured, broad-ovate, acuminate, serrate: calyx coloured: throat bearded: corol long, nearly glabrous: leaves oblong-ovate, acute, coarsely serrate; nerves all over pilose: stem acutely angled, glabrous.

bradburiana, Bk. (W. p. Ju. ♃.) heads large, terminal: outer bracts broad-lanceolate, ciliate, coloured: calyx pilose, densely bearded at the throat, with 5 subulate, very long, divaricate teeth: leaves opposite, sessile, or with very short ciliate petioles; hairy on both sides, lance-oblong, dentate, rounded at the base. Stem simple. 3 f.

scabra, Bk. (W. p. Au. ♃.) heads large, simple, terminal, somewhat in threes: bracts lance-ovate: teeth of the calyx short, acute, nearly straight: leaves lance-ovate, sub-cordate, serrate, opposite, scabrous, punctate, somewhat hairy: petioles short hairy. Stem branching. 3 f. Salvia.

21—6. MONILA. 58. 1.

aurea, stiped: threads constituting a little head: cespitose, golden-yellow.

fructigena, stemless, cespitose, roundish, white-cinereous: threads mould-like, indeterminately effuse, having ovate articulations. Dematium.

3—2. MONOCERA. 4. 10.

Southern.

aromatica, Wr. (2) (E. J. ♃.) (Described under Chloris monostachya.) Manisuris.

10—1. MONOTROPA. 18. 51.

uniflora, (bird's nest, indian pipe. O. w. J. ♃.) stem 1-flowered: flower nodding at first, at length erect: scales of the stem approximate. Whole plant ivory-white at first. 4—8 i. *S.*

Southern.

morisoniana, Mx. (E. J. ♃.) scape elongated, straight, 1-flowered: scales distant: flowers erect: stamens 10—12. Hypopithys.

(1) ciliata, Mx. not L. (2) Aegilops, Wr. Chloris monostachya, Mx.

10—1. MONOTROPSIS. (1) 18. 51.

Southern.

odorata, Sz. (E. r-w. Mar.) flowers bell-form, in aggregate heads. 3—4 i. Hydrangea.

19—4. MORUS. 53. 98.

rubra, W. (red mulberry. O. M. ♄.) leaves cordate, ovate, acuminate or 3-lobed, equally serrate, scabrous, soft hairs beneath: pistillate spikes cylindric. 15—30 f. *S.*

Exotic.

alba, (white mulberry. M. ♄.) leaves heart-form, with oblique bases, ovate or lobed, unequally serrate, smoothish. From China and Persia. Naturalized. 15—20 f.

nigra, (black mulberry. Ju. ♄.) leaves cordate, ovate or sub-5-lobed, unequally toothed, scabrous. From Persia. Buxus.

21—6. MUCOR. 58. 1.

1. *Stipe racemed.*

aspergillus, (mould.) stipe filiform, dichotomous: little heads terminal, subconjugate, oblong when mature. On putrid fungi in autumn. Grey.

2. *Stipe simple.*

muceda, receptacle or fruit inflated, dark-grey: mouth round, dehiscent about the stipe. On putrid cabbage, in autumn and winter.

caninus, crowded together, byssus-like or flax-like, white: fruit minute, becoming yellowish. Stipe long and lax. In mild winters and after storms, on manure, &c.

3. *Without a stipe.*

herbariorum, yellow, permanent: fruit globose, sitting among down. On dry plants in moist places. Onygena.

3—2. MUHLENBERGIA. 4. 10.

diffusa, Sr. (2) (drop-seed grass. O. J. 2ℓ.) culm diffuse: (decumbent) leaves lance-linear, panicle branched, appressed: awns as long as the corol. 18 i. *S.* Trichodium.

Muhlenbergia, BRACHYELYTRUM.

14—1. MYAGRUM. 39. 63.

Southern.

argenteum, Ph. (W. y. Ap. 2ℓ.) Described under Alyssum ludovicianum.

Myagrum, ALYSSUM. CAMELINA.

4—4. MYGINDA. 43. 95.

myrtifolia, Jn. (3) (W. w. Au. ♄.) leaves opposite, oblong, obtuse, serrate, reflexed at the margin, glabrous, perennial: peduncles axillary, very short, sub-solitary, 1-flowered, 2-bracted at the base. *S.* Pulmonaria.

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(1) Elliott proposed SCHWEINITZIA as a substitute for MONOTROPSIS, and Nuttall has adopted it. (2) Dilepyuum, Mx. (3) Ilex myrsinites, Ph.

10—1. Mylocarium. 23. 71.

Southern.

ligustrinum, W. (buckwheat tree. E. w. M. ♄.) leaves perennial, alternate, sessile, wedge-lanceolate, very entire, glabrous, sub-glaucous beneath: racemes simple, terminal. 6—15 f. Melia.

5—1. Myosotis. 41. 42.

palustris, Roth. (1) (scorpion weed. (O. b. M. ♃.) seeds smooth: calyx leaves sub-oval, about as long as the tube of the corol: stem sub-ramose: leaves lance-oval: racemes bractless. 12—18 i.

arvensis, (2) (forget-me-not. E. w-b. J. ☼.) seeds smooth: calyx leaves oval, acuminate, very hirsute, longer than the tube of the corol: stem very branching: racemes conjugate: leaves lance-oblong, hirsute. 4—8 i. *S.*

Southern.

nana, W. (W. b. & y. ♃.) leaves oblong, villose: racemes few-flowered: seeds smoothish; margin serrulate.

suffruticosa, T. & J. (W. b.?) stem suffruticose, very branching, hirsute: leaves lance-linear, hispid-pilose: spikes terminal, many: flowers pedicelled: calyx closed: seeds smooth depressed-ovate. 8 i. Lycopus.

5—13. Myosuros. 26. 61.

[Generic description is here given, it having been omitted at page 34. It should follow Zanthorhiza.] Calyx 5-leaved, caducous, elongated at the base: nectaries (petals,) 5, lingui-form, petal-like: seeds numerous in a long cordate receptacle.

Southern.

minimus, (E. Ap. ☼.) leaves linear, entire: scape 1-flowered: stamens 5—8. Petals anther-form. 2—4 i. Tradescantia.

20—4. Myrica. 50. 99.

gale, W. (sweet gale. O. M. ♄.) leaves wedge-lanceolate, obtuse, serrate at the apex: staminate aments imbricate; scales acuminate, ciliate: fruit in a scaly head. 3—4 f.

cerifera, (bayberry. E. g-p. M. ♄.) leaves wedge-lanceolate, acute, with distant serratures at the apex: staminate aments lax; scales acute: fruit small, globose, covered with a whitish wax, in a mealy state. Var. *pumila*, Mx. leaves lance-linear. 5—18 f. *S.*

caroliniensis, W. (E. Ap. ♄.) leaves wedge-oblong, coarsely toothed: staminate aments lax; scales acute: berry globose, large. 3—4 f. *S.*

pensylvanica, Lk. (E. M. ♄.) leaves oblong, acutish at each end, very entire or sparingly subserrate at the apex, revolute at the margin: staminate aments lax; scales acute: berry globose, large. 3 f. Viscum.

20—13. Myriophyllum. 15. 88.

verticillatum, (water milfoil. O. Ju. ♃.) leaves pinnate, capillary; upper ones pectinate-pinnatifid: flowers in axillary whorls; lower ones pistillate; upper ones staminate or perfect, octandrous. In stagnant waters. *S.*

spicatum, (E. Ju. ♃.) leaves all pinate, capillaceous: spikes interrupted, naked, whorled: flowers staminate, polyandrous.

heterophyllum, Mx. (Ju. ♃.) lower leaves capillary, pinnate; upper ones oval, acutely serrate: flowers hexandrous.

capillaceum, (Ju. ♃.) leaves all capillary-pinnate: flowers axillary, opposite.

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(1) scorpioides, W. laxa, Lek. (2) verna, N.

and alternate, tetrandrous, mostly perfect: fruit 4-angled, formed of four cylindrical seeds.

ambiguum, N. (1) (E.) stem floating, dichotomous: leaves petioled, obsoletely pinnate; lowest ones capillary, middle ones pectinate, upper ones nearly entire. Var. *limosum*, stem rooting, erect: leaves rigid, mostly 3-cleft: segments setaceous, acute.

tenellum, Bw. (E. Ju. ♃.) erect, nearly leafless: bracts entire, obtuse: petals linear, conduplicate and revolute. 4—12 i.

Southern.

scabratum, Mx. (E. J. ♃.) leaves pinnatifid: flowers whorled, axillary; upper ones staminate, tetrandrous; lower ones pistillate: fruit 3-angled. 12 i.
Sagittaria.

Myrrhis, URASPERMUM.

11—1. MYRTUS. 19. 39.

Exotic.

communis, (myrtle. w. Ju. ♄.) flowers solitary: involucre 2-leaved: leaves ovate.
Amygdalus.

N.

21—6. NÆMASPORA. 58. 1.

chrysosperma, receptacle manifest, spherical, sub-conic, truncate; hairs gold-yellow. Under the bark of poplar.

crocea, receptacle obsolete or none, naked; hairs crowded, unequal, somewhat woody, saffron-yellow. Chiefly on beech wood in winter.
Tubercularia.

19—1. NÁJAS. 15. 6.

[Generic description is here given, it having been omitted at page 67, after Chara and before the words ORDER II. &c.] Staminate flowers—calyx cylindric, 2-cleft: stamen filamentous, long: anther 4-valved; valves spreading. Pistillate flowers—calyx o: style 1, with 2 stigmas: nut 4-seeded.

canadensis, Mx. (water nymph. E.) small, filiform, smooth: leaves narrow-linear.
Podostemum.

Napæa, SIDA.

6—1. NARCISSUS. 9. 17.

Exotic.

pseudo-narcissus, (daffodil. M. ♃.) spathe 1-flowered: nectary bell-form, erect, crisped, equalling the ovate petals.

tazetta, (polyanthos. M. ♃.) spathe many-flowered: nectary bell-form, plicate, truncate, thrice as short as the petals: petals alternately broader: leaves flat.

jonquilla, (jonquil. M. ♃.) spathe many-flowered: nectary bell-form, short: leaves subulate.

poeticus, (poet's narcissus. ♃.) spathe 1-flowered: nectary wheel-form, very short, scarious, (red,) crenulate: leaves inflexed at the margin.
Pancratium.

3—1. NARDUS. 4. 10.

Southern.

stricta, (mat grass. W. ♃.) spike setaceous, straight: flowers one-sided.
Miegia.

(1) procumbens, Bw.

6—1. NARTHECIUM. 10. 16.

americanum, Ker. (1) (false asphodel. E. y. Ju. 2f.) racemes sometimes interruptedly spiked, lax: one cauline bract clasping the pedicel, another chaff-bristle-form below: filaments with short wool. Ornithogallum.

Nasturtium, ERYSIMUM.

21—2. NECKERA. 56. 4.

1. *Leaves 2-ranked.*

pennata, foliage 2-ranked, compressed: leaves lance-oval, acuminate, nerveless; disk undulated: capsule emersed in the calyx (pericheth) lid sub-conic and somewhat cuspidate. On trunks of trees.

macropodia, decumbent, sub-ramose: leaves flattish, lanceolate, facing 2 ways: capsule cylindric, straight, terminating in a long bristle.

2. *Leaves imbricate every way.*

dendorhizans, creeping: branchlets spreading and somewhat 2-ranked: summit rooting in some: leaves somewhat depressed-imbricate, oval, acute, nerveless: capsule cylindric; lid somewhat conic, oblong, obtuse—columella exsert. On trees.

seductrix, creeping, somewhat ascending; branchlets erect, in some places fascicled: leaves closely imbricate in a cylinder, oval, acuminate, nerveless: capsule cylindric; lid from the base conic, shortish, cuspidate.

viticulosa, stem ascending, simple or with few branches: leaves lax, from the side of the base ligulate-obtuse: capsule oblong; lid conic, long-cuspidate, small. On trunks of trees. Cryphaea.

6—2. NECTRIS. 15. 22.

Southern.

aquatica, (E. g-y. M. 2f.) submersed leaves opposite, many-parted, capillary: floating ones alternate, elliptic, peltate, entire: raceme terminal. Melanthium.

Nectris, FLOERKEA.

12—13. NELUMBIUM. 26. 61.

luteum, W. (2) (sacred bean. y. Ju. 2f.) leaves peltate, orbicular, entire: corol polypetalous: anthers linear above. Lake Ontario, &c. *S.*

Southern.

pentapetalum, W. (E. w. Ju. 2f.) leaves peltate, orbicular, entire: calyx 5-leaved: petals 5.

reniforme, W. (E. 2f.) leaves reniforme: coral polypetalous. These two southern species rest on the authority of Walter. No botanist has recently seen them. Elliott. Sempervirens.

5—1. NEMOPHILA. 41. 42.

[Generic description is here given, it having been omitted after Hydrophyllum; p. 26.] Calyx 10-cleft; outer divisions reflexed: corol sub-campanulate, 2-lobed; lobes emarginate, with stamen-bearing, margined, nectaries at the base: stamens short; filaments naked; capsules fleshy, 1-celled, 2-valved: seeds 4.

Southern.

phacelioides, N. (W. b. M. ♂.) succulent: stem 3-sided: leaves alternate,

(1) Phalangium ossifragum, M. (2) Nymphea nelumbo, L. Cyamus flavicomus, Sy. luteus, E.

pinnatifid: peduncles very long, 1-flowered, opposite the leaves and terminal, somewhat racemed; racemes incurved: fruit deflexed. Resembles Hydrophyllum. Ellisia.

18—1. NEOTTIA. 7. 21.

tortilis, W. (1) (summer ladies' tresses. O. w. J. 2f.) radical leaves linear: scape sheathed: flowers spirally secund: lip somewhat 3-lobed; middle lobe larger, crenulate. 12 i. *S.*

gracilis, Bw. (O. w. Ju.) leaves radical, ovate: scape sheathed: flowers in a spiral row: lip obovate, curled. Var. *secunda*, spike unilateral, hardly spiral: flowers more slender. 8—12 i.

vernua, (2) (nodding ladies' tresses. O. w. Au. 2f.) leaves lanceolate, 3-nerved: stem sheathed: spike oblong, dense-flowered; flowers recurve-nodding: lip oblong, entire, acute. Var. *major*, stem tall, somewhat leafy: flowers very large. Var. *latifolia*, stem short: leaves lance-oblong, sub-radical, flat. 3—18 i. *S.* Listera.

Neottia, GOODYERA.

13—1. NEPETA. 42. 39.

cataria (catmint, catnep. O. b-w. 2f.) hoary-pubescent: flowers in whorled spikes; leaves petioled, cordate; tooth serrate. Introduced?

21—5. NEPHROMA. 57. 2.

resupinata, frond brownish, pubescent, granulated: fertile lobes short: laminæ of the receptacle reddish-yellow. Var. *papyracea*, frond greenish. Earth among moss. Evernia.

Nicandra, ATROPA.

5—1. NICOTIANA. 28. 41.

Exotic.

tabacum, (virginian tobacco. w-r. Ju. ☼.) leaves lance-ovate, sessile, decurrent; flowers acute. Naturalized.

rustica, (common tobacco. Au. ☼.) leaves petioled, ovate, entire: flowers obtuse. Naturalized.

paniculata, (small-flowered tobacco. Au. ☼.) leaves petioled, cordate, entire: flowers panicled, obtuse, clavate.

Southern.

quadrivalvis, Ph. (W. b-w. Ju. ☼.) leaves oblong-ovate, petioled: flowers scattered, solitary, near the summit of the branches: corol funnel-form; divisions oblong, acutish: capsule sub-globose, 4-valved. Hyosciamus.

12—4. NIGELLA. 26. 61.

Exotic.

damascena, (fennel-flower. M. ☼.) flower surrounded with a leafy involucre.

sativa, (nutmeg flower.) pistils 5: capsules muricate, roundish leaves sub-pilose, pinnatifid. 9—15 i.. Paeonia.

6—3. NOLINA. 10. 13.

Southern.

georgiana, Mx. (E. w. M. 2f.) leaves long-linear, coriaceous, dry: scape with small subulate scales near the base: panicle spreading, racemose. 2—3 f. Wendlandia.

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(1) Ophrys aestivalis, Mx. Satyrium spirale, Sw. Limodorum præcox, Wr. (2) Ophrys, L. Limodorum autumnale, Wr.

21—4. Nostoc. 57. 2.

commune, on the earth: frond plated-lobed, ventricose, gelatinous.—On the earth after a storm, an inch or two in extent, olive-green.
pruniforme, frond solitary, spherical, smooth, olive, gelatinous, coriaceous, surface smooth: threads interwoven-crisped. In lakes.
botryoides, fronds minute, globular, aggregated into a green crust. In moist shady places, and on decaying wood. Spiloma.

12—1. Nuphar. (1) 13. 62.

advena, (2) (O. y. Ju. 2f.) leaves cordate; lobes divaricate: calyx 5—6-leaved: stigma crenate: capsule furrowed. Leaves always floating in deep water and erect in shallow. Petioles semi-cylindrical. Bw. *S.*
kalmiana, A. (3) (O. Ju. 2f.) leaves cordate, lobes near each other: calyx 5-leaved: stigma gashed, with 3 to 12 radiated lines.—Flowers small. Water.

Southern.

sagittaefolia, Wr. (4) (E. y. Ju. 2f.) leaves long cordate-sagittate, obtuse: calyx 6-leaved: petals o: anthers sub-sessile: stigma entire. Water. Nymphaea.

15—12. Nuttallia. (5) 37. 74.

Southern.

digitata, N. (W. r. M. 2f.) glaucous: lower leaves obsoletely digitate, sub-peltate; divisions linear; segments glabrous; upper leaves 3-parted and simple: peduncles somewhat racemed, very long. 3—4 f. Styrax.

12—1. Nymphaea. 13. 62.

odorata, A. (pond-lily. O. w. Ju. 2f.) leaves round-cordate, entire, sub-emarginate: lobes spreading asunder, acuminate, obtuse: petals equalling the 4-leaved calyx. Var. *rosea*, petioles, peduncles and leaves purplish beneath: lobes divaricate, acute. *S.* Chelidonium.

20—5. Nyssa. 12. 24.

multiflora, Wr. (6) (pepperidge, tupelo. O. y-g. M. ♄.) leaves oblong, entire, acute at both ends; the petioles, midribs and margins villose: pistillate peduncles sub-3-flowered: nut short-obovate, obtuse, striate. *S.*
aquatica, (7) (sour gum. E. M. ♄.) leaves ovate-oblong, entire, acute, at both ends, glabrous: pistillate peduncles 2-flowered: drupe short, obovate: nut obtusely striate. *S.*

Southern.

capitata, Wr. (8) (E. M. ♄.) leaves short-petioled, lance-oblong and oval, nearly entire, pubescent and somewhat hoary beneath: staminate flowers capitate: pistillate ones solitary.
tomentosa, Mx. (E. M. ♄.) leaves long-petioled, oblong, acuminate, remotely serrate, tomentose beneath: pistillate flowers solitary: drupe oblong.
uniflora, Wr. (9) (E Ap. 2f.) leaves long petioled, oblong, acuminate, remotely serrate, glabrous on both sides: pistillate peduncles one-flowered: drupe oblong. Hamiltonia.

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(1) Nymphea, L. (2) lutea, W. (3) minima, M. (4) Nymphaea, Wr. longifolia, Mx. (5) of W. Dick, Callirhoe, N. (6) villosa, and sylvatica, Mx. (7) biflora, Wr. intergrifolia, A. (8) candicans, Mx. (9) denticulata, A. angulisans, Mx.

O.

13—2. Obolaria. 40. 35.

virginica, (penny-wort. E, r. Ap. 2[.) stem simple: leaves oblong, truncate, fleshy, purple beneath: flowers axillary, solitary, sessile.. 3—4 i. *S.*
Castilleja.

14—1. Ocymum. 42. 39.

Exotic.

basilicum, (basil. ☼.) leaves ovate, glabrous: calyx ciliate. 6—12 i.
Macbridea.

5—2. Œnanthe. 45. 60.

longifolia, Ph. (1) (water dropwort. E. w. Au. 2[.) leaves pinnate; leafets lance-linear, often falcate, mostly entire: umbels nearly naked. 3—5 f.
rigidus, (2) (E. w. S. 2[.) stem terete, striate: leaves pinnate, smooth; leafets lance-oblong, entire, or with remote teeth. 2—4 f.

Southern.

filiformis, Wr. (3) (E. w. Au. ☼?) leaves simple, terete, jointed, acute: seeds winged.
phellandrium, Lk. (4) (W. Ju. 2[.) ramifications of the leaves divaricate. In water.
Carum.

Œnoplia, Rhamnus.

8—1. Œnothera. 17. 88.

1. *Capsules elongated, sessile.*

biennis, (scabish, tree-primrose. O. y. J. ♂.) stem villose, scabrous: leaves lance-ovate, flat, toothed: flowers sub-spiked, sessile: stamens shorter than the corol. 3—5 f. *S.*
muricata, (E. y. Ju. ♂.) stem purple, muricate: leaves lanceolate, flat: stamens of the length of the corol. 1—2 f. *S.*
parviflora, (E. y. Ju. ♂.) stem smooth, sub-villose: leaves lance-ovate, flat: stamens longer than the corol. *S.*
grandiflora, A. (E. y. Ju. ♂.) stem glabrous, branching: leaves lance-ovate, glabrous: stamens declined. Flowers very large. A variety of Œ. biennis? T. 2—3 f. *S.*
sinuata, W. (y. J. ☼.) stem diffused, soft-pubescent: leaves oval-oblong, tooth-sinuate: flowers axillary, villose: capsules prismatic. Var. *minima*. (5) stem low, simple, 1-flowered: leaves entire. *S.*

2. *Capsules ventricose, angular, mostly pedicellate.*

fruticosa, W. (sundrops. E. y. Ju. 2[.) pubescent: stem branched from the base: leaves lanceolate, sub-dentate, acute: capsules pedicelled, oblong-clavate, angled: raceme naked below. Var. *ambigua*, is somewhat hairy: stem simple: leaves lanceolate or lance-ovate, acute, sub-denticulate: petals obcordate; width exceeding the length: capsule sub-sessile, smooth, oblong, 4-winged: raceme naked below. 12—18 i. *S.*
incana, N. (E. y.) stem slender, erect: leaves flat, hoary and tomentose, very entire, oval-ovate, acute: raceme few-flowered, naked: capsules sub-sessile, oblong, 4-sided. Probably a variety of the last. 6—8 i.

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(1) Pastinaca, T. Sium, Ph. Œ. ambigua, N. (2) Sium, L. Sison marginatum, Mx. (3) carolinensis, Ph. teretifolium, M. (4) Phellandrium aquaticum, Ph. (5) Œ. minima, Ph.

hybrida, Mx. (E. y. Au.) stem erect, villous: leaves pubescent on both sides, lanceolate, remotely toothed, undulate: capsules somewhat spiked, short-petioled, ovate-4-angled. 1—3 f. *S.*

pumila, (E. y. Ju. 2f.) glabrous: stem ascending: leaves lanceolate, very entire, obtuse: capsule subsessile, elliptic-obovate, angular. 8—12 i. *S.*

chrysantha, Mx. (dwarf scabish. y. J. 2f.) stem slender, pubescent: leaves lanceolate, obtusish, flat, entire: tube of the calyx but half as long as the divisions: capsule clavate, acute-angled, mostly sessile. A variety of the last? 10 i. *S.*

pusilla, Mx. (A. y. Ju. 2f.) sub-pubescent: stem small, sub-simple: leaves lance-oblong, obtusish, entire: flowers axillary at the top: capsules clavate, turbinate, about equally 8-sided. 4—6 i. *S.*

Southern.

glauca, Mx. (O. y. Ju. 2f.) very glabrous: leaves broad-oval, repand-denticulate, smooth, glaucous: capsule ovate-4-angled, pedicelled.

linearis, Mx. (E. y. Ju. 2f.) wholly pubescent, slender: leaves linear, entire: capsules long-peduncled, roundish, 4-angled, villose.

caespitosa, Ph. (W. w. & r. Ju. 2f.) stemless: leaves lanceolate, gash-toothed: capsules oblong, sessile: tube of the calyx very long: petals 2-lobed, distant.

pinnatifida, N. (1) (W. w. J. ♂.) minutely pubescent: stem decumbent: radical leaves nearly entire; cauline ones pinnatifid; segments linear, acute: capsules prismatic, grooved. 6—24 i.

fraseri, Ph. (E. Ju. 2f.) nearly glabrous: stem simple below, branching above: leaves ovate, petioled, glandular-denticulate: racemes leafy: capsules pedicelled, obovate, 4-angled.

macrocarpa, Ph. (2) (W. y. Au. ♂.) nearly glabrous: stem branching: leaves lanceolate, petioled, distantly glandular-denticulate, white-silky on the margin and nerves: petals obcordate, with a point: capsules elliptic, 4-winged, very short-pedicelled.

triloba, N. (W. y. M. ☼. & 2f.) stemless: leaves interruptedly pinnatifid, toothed, glabrous: petals 3-lobed at the apex: capsules 4-winged, large.

speciosa, N. (W. w. J. 2f.) finely pubescent: leaves lance-oblong, toothed, sub-pinnatifid: raceme naked, at first nodding: capsules obovate, angled stem suffruticose.

linifolia, N. (W. y. J. ♂.) leaves entire; radical ones lanceolate; cauline ones linear, crowded: raceme naked, terminal: capsule obovate, angled, pubescent: petals obcordate, longer than the stamens: stigma 4-lobed.

serrulata, N. (W. y. J.) leaves linear, somewhat spinose-serrate, acute: flowers axillary: leafets of the calyx keeled: stigma 4-lobed: capsules cylindric, erect: stem suffruticose.

humifusa, N. (E. w.) stem prostrate, branching, villous: leaves lance-linear, sub-dentate or entire, silky-villose: flowers axillary: calyx villose; tube a little longer than the germ: capsule prismatic.

albicaulis, N. (W. w. Ju. 2f.) stem simple, erect, white, glabrous, branching above: leaves lance-linear, rarely sub-serrulate, sub-villose beneath: flowers axillary; petals entire: capsules prismatic. 3 f.

riparia, N. (E. y. ♂.) smoothish: stem erect, virgate-branched: leaves lance-linear, acute, distantly sub-denticulate, flat: capsules spiked, pedicelled, obovate, 8-grooved: valves with dorsal ridges. 2 f. Gaura.

Oldenlandia, HEDYOTIS.

2—1. OLEA. 44. 37.

Southern.

americana, W. (american olive, devil's wood. L. w. M. ♄.) leaves lanceolate elliptic, entire: racemes compressed: bracts all persistent, connate, small. Elytraria.

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(1) albicáulis, Ph. (2) alata, N.

21—1. Onoclea. 55. 5.

sensibilis, (sensitive fern. O. J. 2f.) barren frond pinnate; fertile one doubly-pinnate: stem glabrous. The leafets slowly approach each other, on squeezing the stem in the hand. *S.*

obtusiloba, Sh. barren frond pinnate; fertile one doubly-pinnate: stem scaly. Struthiopteris.

Onoclea, Struthiopteris.

17—1. Onopordon. 49. 54.

Exotic.

acanthium, (cotton thistle. p. Ju. ♂.) scales of the calyx spreading every way, acuminate: leaves ovate-oblong, toothed-spinose, woolly. Naturalized. Cnicus.

5—1. Onosmodium. 41. 42.

hispidum, Mx. (1) (false gromwell. O. y-w. J. 2f.) very hispid: leaves lance-oval, acute, pappillose-punctate; divisions of the corol subulate. 1—2 f. *S.*

molle, Mx. (2) (w. Ju. 2f.) whitish-villose: leaves oblong-oval, somewhat 3-nerved; divisions of the corol sub-oval. *S.* Echium.

51—6. Onygena. 58. 1.

equina, gregarious, pale-white and reddish: fruit orbicular, glabrous, rugose. bran-like: stipe short, somewhat fibrous. On hoofs of horses and horns of cattle, which are thrown into wet places. Aecidium.

22—5. Opegrapha. 57. 2.

macularis, (lettered lichen.) crust determinate, unequal, dark-fuscous: receptacles minute, crowded, round-oval, at length rugose, irregular: disk rimose-like. On the bark of beech and oak.

abnormis, crust thin, softish, white: receptacles immersed, very thin, short and long, flexuose, confluent, rugose-crisped: scarcely any distinct margin and disk. On the hard bark of trees.

vimalis, crust effuse, becoming cinereous: receptacles sessile, oblong, straightish, simple, tumid: disk channelled, concave; margins elevated, sub-inflexed, parallel. On bark of trees.

herpetica, var. *disparata*, Ach. receptacles short, broad: crust of a reddish olive hue. On smooth bark.

vulgata, Ach. receptacles turgid, cylindric. On trunks.

notha, Ach. disk of the receptacle without the cleft. Var. *gregaria*, receptacles crowded: disk flexuous and plicate. Var. *cæsia*, receptacle with a greyish pruinose disk. On trunks.

vulvella, Ach. receptacles elliptic, gaping in the middle.

21—1. Ophioglossum. 55. 5.

vulgatum, (addertongue fern. E. M. 2f.) frond ovate, simple, obtuse, closely reticulate: spikes about an inch long, cauline. 8 i. Near Troy.

bulbosum, W. (3) (E. M. 2f.) root bulbous: frond heart-ovate, obtuse: spike cauline. 6 i. *S.*

Southern.

pusillum, N. (E.) spike cauline: frond cordate, acute. 1 i. Botrychium.

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(1) Lithospermum virginianum, L. Purshia hispida, St. (2) Lithospermum carolinianum, Lk. (3) crotalopharoides, Wr.

5—1. Ophiorhiza. 47. 46.

Southern.

mitreola, W. (1) (E. w. Ju. ☼.) leaves ovate, sessile, with the margins scarious. 12—18 i.

lanceolata, E. (2) (E. w. & p. Au. ☼.) leaves long-lanceolate, finely serrulate, tapering at the base. 18 i. Bumelia.

15—5. Oplotheca. 14. 73.

Southern.

floridana, N. (O. w. Ju. 2f.?) stem erect, sparingly branched above, pubescent, with tumid joints: leaves sessile, lance-linear, scabrous above, lanuginous beneath. 3—4 f. Pelargonium.

18—1. Orchis. (3) 7. 21.

1. *Roots oval or palmate.*

spectabilis, W. (4) (O. r. M. 2f.) lip obovate, undivided, crenate, retuse: petals straight; lateral ones longest: spur clavate, shorter than the germ: bracts longer than the flowers: stem leafless. 3—6 i. *S.*

flava, (E. y. Ju. 2f.) lip 3-cleft, entire; middle division larger, (ovate, entire, crenulate, N:) spur filiform, of the length of the germ: spike compact: bracts longer than the flower. 1—2 f. *S.*

obsoleta, W. (5) (E. J. 2f.) lip lance-oblong, undivided: bracts short: germ pedicelled: scape naked: spur obtuse, sub-inflated, as long as the germ: petals erect.

tridentata, W. (6) (E. w. J. 2f.) lip lanceolate, 3-toothed at the apex: petals obtuse: spur filiform, clavate, ascending, longer than the germ. 6—12 i. *S.*

2. *Roots fascicled.*

virescens, W. (E. g. Ju. 2f.) lip lanceolate, crenate: petals connivent: bracts longer than the flowers: spur sub-inflated, obtuse. 12—18 i.

hyperborea, W. (E. g-y. Ju. 2f.) lip lanceolate, as large as the spreading petals: spur subulate, shorter than the germ: spike ovate: bracts as long as the flowers.

obtusata, Ph. (E. 2f.) lip linear, very entire, longer than the spur: spur as long as the germ: leaf solitary, radical, sub-wedge-form, obtuse.

rotundifolia, Ph. (E. 2f.) lip 3-cleft; middle division 2-cleft: spur shorter than the germ: leaves roundish-oval.

Southern.

nivea, N. (E. w.) lip linear, oblong, entire: petals spreading: spur filiform, longer than the germ: lower leaves linear, very long; upper ones subulate.

viridis, (A. g-w Ju.) lip linear, 3-toothed at the apex: petals connivent: spur obtuse, sub-inflated: bracts much longer than the flowers. 3 i.

bidentata, E. (E.) lip oval-oblong, 2-toothed at the base: petals ovate, spreading: spur shorter than the thickened germ: leaves narrow-lanceolate: stem nearly naked. 12—18 i. Habenaria.

Orchis, Habenaria. Tipularia.

13—1. Origanum. 42. 39.

vulgare, (wild marjoram. O. r. Ju. 2f.) spikes round-panicled, heaped: bracts ovate, longer than the calyx. 1—2 f. *S.*

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(1) ovatifolia, M. (2) mitreola, M. (3) Some of the species here described may belong to the genus Habenaria. (4) humilis, Mx. (5) Satyrium, P. (6) clavellata, Mx.

Exotic.

majorana, (sweet marjoram. ♄.) spikes roundish, ternate, compact, peduncled. leaves petioled, oval, obtuse, smoothish. 6—12 i. Dracocephalum.

6—1. ORNITHOGALUM. 10. 16.

Exotic.

umbellatum, (star-of-bethlehem. M. 2ℓ.) flowers corymbed, peduncles longer than the bracts: filaments subulate. Naturalized. 6—8 i.

Southern.

bracteatum, T. & J. (W. p. 2ℓ.) scape bracted, one-flowered, terete: petals lance-oblong, obtusish: filaments linear: leaves filiform, channelled. 4 i. Lilium.

Ornithogalum, PHALANGIUM.

2—1. ORNUS. 44. 37.

americana, Ph. (E. M. ♄.) leafets broad-ovate, serrate; terminal one obcordate. Jasminum.

13—2. OROBANCHE. 40. 35.

uniflora (1) (squaw-root, cancer-root. O. p-w. J. 2ℓ.) scapes in pairs, naked, 1-flowered: corol recurved. About 3 inches high, of a yellowish white colour. *S.*

americana, (O. p-y. Ju. 2ℓ.) stem simple, covered with imbricate lance-oval scales: spike terminal, glabrous: corol recurved: stamens exsert. Hardly a span high: brownish yellow. *S.*

Southern.

ludoviciana, N. (W. p.) pulverulent-pubescent: stem low, simple: flowers and ovate acute scales sub-imbricate: calyx 2-bracted: corol recurved: stamens inclosed, smooth. 3—4 i.

fasiculata, N. (W. p. Ju.) stem short, simple: peduncles numerous, naked, nearly terminal, about the length of the stem: scales few, ovate, concave, pubescent. 4—5 i. Epiphegus.

Orobanche, EPIPHEGUS.

16—10. OROBUS. 32. 93.

Southern.

dispar, N. (W. w-y. J. 2ℓ.) leaves unequally pinnate; leafets linear, obtuse: stipules ovate, acute: racemes sessile, filiform, (2—3 together.) Phaca.

Orobus, PSORALEA.

6—1. ORONTIUM. 2. 7.

aquaticum, (golden club. E. y. M. 2ℓ.) leaves lance-ovate: spike cylindric, on a scape. 12—20 i. *S.* Acorus.

13—2. ORTHOCARPUS. 40. 35.

Southern.

luteus, N. (W. y. Ju.) stem simple, terete, hirsute-pilose: leaves alternate, sessile, lance-linear, acute, entire; upper ones gradually larger: calyx, bracts and leaves viscid-pubescent. 12—14 i. Orobanche.

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(1) biflora, N.

3—2. Orthopogon. 4. 10.

Southern.

hirtellum, (1) (E. Au. 2ℓ.) spike compound ; spikelets appressed, alternate : valves of the calyx all awned, outer awn very long. Procumbent.
Phragmites.

21—2. Orthotrichum. 56. 4.

cupulatum, peristome simple; teeth with pits : capsule immersed, sub-sulcate . calyptre globe-bellform, glabrous : stem ramose : leaves lance-ovate.
strangulatum, peristome simple ; teeth 16, entire : capsule immersed, sulcate, contracted in the middle : leaves lanceolate, sub-entire, obtusish : stems cespitose, erect, sub-ramose ; calyptre campanulate, with 8 furrows.
coarctatum, inner peristome 8-toothed : germ exsert at the extremities, plaited.
striatum, teeth of the inner peristome 16, lanceolate, erose ; germ immersed, smooth : leaves lanceolate.
Ulota.

6—2. Oryza. 4. 10.

Exotic.

sativa, (rice. ☼.) culm jointed : leaves clasping : panicle terminal
Oxyria.

3—2. Oryzopsis. 4. 10.

asperifolia, Mx. (mountain rice. O. M. 2ℓ.) culm nakedish : leaves rigid, erect, pungent at the point : flowers in a racemose panicle. 18 i.
Mapania.

21—1. Osmunda. 55. 5.

cinnamomea, Mx. (flowering fern. O. y. J. 2ℓ.) barren frond doubly pinnatifid ; segments oval, entire : fertile fronds with opposite racemes, woolly. 3—6 f. *S.*
interrupta, Mx. (O. g-y. J. 2ℓ.) barren leafets on the frond, with the fertile ones above and below and sometimes among them. Damp.
regalis, Mx. (2) (O. r-y. J. 2ℓ.) frond bipinnate, terminating in several racemes, very branching, and without hairs. Wet.
claytoniana? W. (E. 2ℓ.) fronds pinnate and pinnatifid, having small dense masses of fulvous down at the origin of the leafets ; bearing fruit on the compressed and diminished summit. 20—30 i. Found in Cambridge, N. Y. by Dr. M. Stevenson. Probably a new species.
Schizea.

19—12. Ostrya. 50. 99.

virginica, A. (3) (iron-wood, hop hornbeam. O. g. M. ♄.) leaves ovate-oblong, sub-cordate, acuminate, unequally serrate : strobiles oblong-ovate, pendulous ; (erect, Ph.) buds acute. *S.*
Platanus.

10—5. Oxalis. 14. 73.

acetosella, (wood-sorrel. O. w. r. M. 2ℓ.) stemless : scape 1-flowered, longer than the leaves : leaves ternate, broad obcordate, with rounded lobes : styles as long as the inner stamens : root dentate.
violacea, (violet wood-sorrel. E. p. J. 2ℓ.) stemless : scape umbelliferous ; pedicels sub-pubescent : flowers nodding : leaves ternate, obcordate, gla-

(1) Panicum, L. (2) spectabilis, W. (3) Carpinus, Lk.

brous : divisions of the calyx callous at the apex : styles shorter than the outer stamens. Damp. *S.*

stricta, (yellow wood-sorrel. O. y. J. ☼.) hirsute : stem erect, branching : peduncles umbelliferous : leaves ternate, obcordate : petals obovate : styles of the length of the inner stamens. 6—12 i. *S.*

corniculata, (O. y. M. ☼.) pubescent : stem branching, diffused, or procumbent : umbels as long as the petioles : leaves ternate, obcordate : petals wedge-form, erose at the apex : styles of the length of the inner stamens. *S.*

Southern.

lyoni, Ph. (E. y. J. 2ℓ.) silky-pilose : stem branching, decumbent : peduncles 2-flowered, longer than the petioles : leaves ternate, obcordate-2-lobed : lobes round, divaricate : petals wedge-form : capsules tomentose, twice as long as the lanceolate calyx. A variety of O. stricta? Elliott.

dillenii, W. (E. y. ☼.) hirsute : stem leafy, erect, rough : umbels longer than the leaves : leaves ternate, obcordate : petals emarginate. A variety of stricta? Nuttall.

recurva, E. (E. M. 2ℓ.?) pilose : stem erect : umbels longer than the leaves : petals obtuse : stamens longer than the calyx : styles very short, recurved : stigmas simple. 4—8 i.

furcata, E. (1) (E. Ap. 2ℓ.) very pilose : stem erect, branching : petals subemarginate : styles as long as the inner stamens : stigmas forked. 3—6 i.

Penthorum.

Oxybaphus, ALLIONIA.

8—1. OXYCOCCUS. 18—51.

macrocarpus, P. (2) (cranberry. O. r. J. ♄.) creeping: stem ascending : leaves oblong, flatish, obtuse, becoming white beneath : pedicels elongated : divisions of the corol lance-linear. Wet. *S.*

vulgaris, Ph. (3) (low cranberry. r. J. ♄.) creeping : leaves oval, entire ; margin revolute, sub-acute, becoming white beneath : peduncles elongated : divisions of the coral oval. Wet. Probably a variety of the first.

Southern.

erythrocarpus, Mx. (4) (A. J. ♄.) erect : leaves oval, acuminate, serrulate : ciliate : pedicels axillary : corol long, at length revolute.

Fuchsia.

3—2. OXYDENIA. 4. 10.

Southern.

attenuata, N. (5) (O. Au. ☼.) panicle simple : spikes very long, numerous, attenuated, somewhat sub-divided near the base : spikelets about 3-flowered : leaves flat, subulate at the point, and with the sheaths scattered with glandulous hairs. 2—3 f.

Chloris.

6—2. OXYRIA. 12. 28.

reniformis, Br. (6) (A. J. 2ℓ.) outer leaves of the calyx oblong, half the length of the inner obovate valves : radical leaves reniform, long-petioled : stamens 2 : styles 2. 2—3 i. *S.*

Nectris.

16—10. OXYTROPIS. 32. 93.

Southern.

lambertii, Ph. (W. p. Ju. 2ℓ.) stemless, silky-pilose : leafets numerous, lance-

(1) dillenii, Ph.? (2) Vaccinium macrocarpon, A. Var. oblongifolius, Mx. (3) palustris, 2d ed. P. Vaccinium oxycoccus, Mx. (4) erectus, Ph. Vaccinium, Mx. (5) Eleusine mucronata, Mx.? (6) Rumex digynus, L.

oblong, acute at each end : scape about equal to the leaves : spikes oblong-capitate : bracts lance-linear, about equal to the calyx. Dolichos.

Oxytropis, ASTRAGALUS.

P.

19—4. PACHYSANDRA. 38. 96. ¦

Southern.

procumbens, Mx. (A. g-w. J. 2f.) stem procumbent : leaves short, oval, crenate-toothed above : calyx minute-ciliate : capsule finely pubescent. Diotis.

12—3. PÆONIA. 36. 61.

Exotic.

officinalis, (peony. r. J. 2f.) leaves decompound ; leafets lobed, lobes broad-lanceolate : capsules downy. Calligonum.

5—2. PANAX. 46. 59.

trifolia, (dwarf ground-nut. O. w. 2f.) leaves in threes, ternate or quinate ; leafets serrate, lance-oblong, sub-sessile ; root tuberous, roundish. Styles generally three. Root round-tuberous, and very deep in the earth in proportion to the size of the plant. 6—9 i. *S.*

quinquefolia, (ginseng. O. w. M. 2f.) root fusiform : leaves ternate, quinate : leafets oval, acuminate, petioled, serrate. Larger than the last. 1—2 f. *S.* Atriplex.

6—1. PANCRATIUM. 9. 17.

Southern.

mexicanum, W. (E. w. M. 2f.) spathe about 2-flowered : leaves lance-oblong : 6 teeth of the nectary, staminiferous ; 6 intermediate, simple. 18—24 i.

maritimum, W. (1) (E. w. Ju. 2f.) spathe many-flowered : leaves lance-linear : nectary with 12 teeth, not staminiferous. 12—18 i.

rotatum, Ker. (E. w. Ju. 2f.) spathe many-flowered : leaves lance-linear : nectary salver-form, tubular below, with 6 stamen-bearing teeth ; intermediate ones gash-toothed : stamens twice as long as the nectary. Brodiaea.

3—2. PANICUM. 4. 10.

crus-galli, (barn grass. O. Au. ☼.) racemss alternate and in pairs, compound : rachis 5-angled : glumes terminating in hispid bristles : sheath glabrous. 2—4 f. *S.*

hispidum, M. (2) (L. S. ☼.) panicle compound, nodding : racemes alternate : glumes terminating in hispid bristles : sheaths hispid. 3—4. *S.*

clandestinum, (3) (Au. 2f.) culm with short axillary branches : leaves broad-lanceolate, cordate at the base : sheaths hispid enclosing the short panicles : abortive floret neutral, 2-valved ; upper valve obtuse. 2—3 f.

pedunculatum, T. (E. Ju. 2f.) culm dichotomous : leaves broad-lanceolate, sub-pilose above, attenuate : sheaths hispid and papillose : panicle long-peduncled, compound, smooth : spikelets ovate, smooth : abortive floret 2-valved ; upper valve half the length of the lower one. 3—4 f.

latifolium, (E. Ju. 2f.) culm generally simple, bearded at the joints : leaves lance-oblong, smooth, or with the sheaths somewhat pubescent : panicle

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(1) carolinianum, L. (2) walteri, Ph. crusgalli, V. hispidum, E. (3) latifolium. Var. clandestinum, Ph.

terminal, a little exsert, simple, pubescent: spikelets oblong-ovate: abortive floret antheriferous, 2-valved: upper valve sub-herbaceous, nearly as long as the lower, acute. 1 f. *S.*

scoparium, Lk. (E. 2f.) softly villose: leaves lanceolate: panicle erect, compound, setaceous, much branched: spikelets turgid, ovate, pubescent. 2 f. *S.*

nervosum, M. (E. Ju. 2f.) culm simple: nodes smooth: leaves broad-lanceolate, smooth, sub-ciliate on the margin: panicle much branched, smooth, many-flowered: spikelets oblong: abortive floret antheriferous, with the upper valve sub-herbaceous, shorter than the lower one. 3—4 f. *S.*

macrocarpon, T. (E. 2f.) culm erect, simple: leaves lance-linear, erect, a little hairy beneath: joints naked: sheaths hispid: panicle rather compound, smooth: spikelets ovate-globose: abortive floret neutral. 3 f.

pubescens, Lk. (E. J. 2f.) erect, much branched, leafy, soft-pubescent: leaves lanceolate, ciliate: panicle small, few-flowered, free: spikelets sub-globose-obovate, pubescent. 18 i. *S.*

involutum, T. (E. 2f.) culm cespitose, simple, or a little branched at the base: leaves erect, somewhat rigid, very narrow, at length involute: panicle simple, few-flowered: florets acuminate: upper valve of the neutral floret very small. 1 f.

depauperatum, M. (E. J. 2f.) culm cespitose, hairy at the joints: leaves lance-linear, smooth or hairy: sheaths pubescent: panicle few-flowered; branches in pairs; one of them 2-flowered, the other 1-flowered. 1 f.

dichotomum, (E. Au. 2f.) culm much branched, dichotomous above; branches fascicled: leaves numerous, smooth, lanceolate: panicle simple, capillary, lax: abortive floret neutral; upper valve minute, 2-cleft. Var. *curvatum*, culm very tall, rather rigid; branches few, somewhat curved. Var. *fasciculatum*, culm low, erect, or decumbent: branches and leaves dense-fascicled: panicles very small, concealed among the leaves. Var. *gracile*, culm tall, slender: leaves membranaceous. 8—16 i. *S.*

nitidum, Lk. (E. Ju. 2f.) culm slender, simple, erect, smooth: sheath bearded at the throat: leaves few, remote, broad-linear: panicle capillary, rather crowded, compound, smooth: spikelets minute, obtuse, ovate, sub-pubescent: lower glume very small. Var. *ciliatum*, culm hairy, leaves lance-linear, (lower ones broader) sparingly hirsute, ciliate on the margin: panicle with the branches and flowers pubescent. Var. *ramulosum*, culm more branched: panicle contracted; branches smooth. Var. *gracile*, culm very slender, smooth: leaves very narrow, smooth: sheaths smooth: panicle sub-simple, few-flowered, smooth: upper valve of the abortive floret minute, entire? Var. *pilosum*, culm simple, very hairy: lower leaves approximate and broad-lanceolate; upper ones linear, rather rigid, sub-pilose above, ciliate at the base: sheaths villose, minutely papillose: panicle sub-contracted; branches virgate, with the flowers pubescent. Var. *glabrum*, (1) smooth all over except the base of the leaves, nearly simple: lower leaves short, approximate, sub-cartilaginous: panicle branched, almost verticillate; spikelets large: upper valve of the abortive floret entire. Var. *barbatum*, (2) culm simple, smooth; nodes hairy: leaves lance-linear: sheaths smooth, except on the margin: panicle sub-simple, smooth: flowers minute, pubescent. 1—2 f.!

agrostoides, M. (3) (O. Au. 2f.) culm compressed, smooth, erect: leaves very long: panicles lateral and terminal, pyramidal, spreading; branches racemiferous: spikelets appressed: abortive floret neutral, valves nearly equal. 2—3 f.

virgatum, (E. Au. 2f.) all over very smooth: panicle diffuse, very large: flowers acuminate: valves of the abortive floret nearly equal. 3—4 f. *S.*

anceps, Mx. (4) (E. Au. 2f.) culm compressed: sheaths ancipitous, pilose: panicle with nearly simple branches: spikelets sub-racemose, much acuminate: abortive floret neutral; upper valve 2-cleft. 3 f. *S.*

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(1) nitidum, Sz. (2) discolor, M. (3) elongatum, Ph. (4) rostratum, M.

rectum, R. & S. (1) (E. Ju.) panicle solitary, shorter than the terminal leaf: branches simple, flexuous: spikelets alternate, peduncled, obovate, turgid: glumes striate, acute: leaves linear, straight, tapering to a sharp point, striate and scabrous above, hairy beneath: sheaths with very long hairs.

verrucosum, M. (2) (E. Au. 2f.) culm slender, decumbent and geniculate, branched below, smooth: leaves smooth: panicle very spreading, few-flowered: flowers verrucose: abortive floret 1-valved. 18 i. *S.*

proliferum, Lk. (3) (E. S. ☼.) culm assurgent, geniculate at the base, very smooth; panicles terminal, and axillary, smooth: spikelets racemose: abortive floret 1-valved. 2—4 f. *S.*

capillare, (O. S. ☼.) culm nearly simple: sheaths very hairy: panicle large, capillary, expanding, loose: spikelets long-peduncled, acuminate, smooth: abortive floret 1-valved. Var. *sylvaticum*, culm branched at the base, very slender: leaves linear. 1—2 f. *S.*

longifolium, T. (E. S. 2f.) very smooth: culm compressed, erect, simple, slender: leaves very long, narrow: panicle simple, elongated, racemose: spikelets acuminate: abortive floret neuter, 2-valved. 2 f.

nodiflorum, Lk. (E. Ju.) panicles very small, lateral and terminal: glumes ovate, pubescent: leaves narrow, short, bearded at the throat.

ciliatum, E. (E. J. 2f.) stem decumbent: panicle few-flowered, expanding: leaves short, lanceolate, and with the sheaths glabrous and finely ciliate. 8—15 i. *S.*

pauciflorum, E. (E. J. 2f.) panicle expanding, few-flowered: flowers very large: leaves narrow-lanceolate, ciliate at the base: sheaths hairy. 12—18 i. *S.*

Southern.

fusco-rubens, Lk. (E. Au.) racemes linear, virgate: glumes clavate, coloured: hairy under the divisions of the panicle.

striatum, Lk. (E) panicle oblong: glumes large, glabrous, green, handsomely striate.

diffusum, Sw. (E. Ju.) panicle simple, capillary, expanding: florets remote, acute: stem simple: leaves long-linear, with the throat and sheaths villous.

gibbum, E. (E. Ju. ☼. ?) racemes many-flowered, appressed, resembling a columnar spike: valves of the calyx strongly nerved, the exterior gibbous at the base: flowers caducous.

molle, Mx. (E. Au. 2f.) spikes panicled, alternate, expanding, one-sided: spikelets approximate, pedicelled, secund, awnless. 4—6 f.

gymnocarpon, E. (E. Au. 2f.) spikes panicled: spikelets in 2 rows, few-flowered: valves of the calyx sub-equal, expanding, much longer than the corol. 2—4 f.

hians, E. (E. Au. ☼. ?) stem glabrous, slender, decumbent: panicle racemose: valves of the neutral floret long, concave, gaping. 10—15 i.

amarum, E. (E. Oc. ☼. ?) very glabrous: leaves thick, glaucous: panicle appressed: glumes acuminate. 2—3 f.

scabriusculum, E. (E.) stem erect, large, and with the under surface of the leaves scabrous: panicle large, pyramidal, expanding: flowers ovate, acute, glabrous. 2—3 f.

multiflorum, E. (E. J. 2f.) stem erect, simple, glabrous: leaves broad-lanceolate, hairy at the base: panicle very branching, spreading: flowers small, pubescent. 24—30 i.

ovale, E. (E.) pubescent: panicle diffused: flowers oblong, oval, hairy: leaves lance-ovate, sub-cordate. 1—2 f.

lanuginosum, E. (E. 2f.) pubescent: panicle diffused, somewhat capillary: flowers oval, small: leaves narrow lanceolate: sheaths villous at the throat. 1—2 f.

viscidum, E. (E. J. 2f.) very downy, hoary, glutinous: stem beneath each joint marked with a smooth ring. 2—4 f.

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(1) strictum, Ph. (2) debile, E. (3) dichotomiflorum, Mx. geniculatum, M.

villosum, E. (E. M. 2f.) villous : stem erect somewhat branched : panicle few-flowered : flowers obovate : leaves erect, flat, rigid. 1—2 f.

sphærocarpon, E. (E. Ap. 2f.) leaves lance-linear, very acute, base and sheath ciliate : panicle spreading : flowers small, roundish, pubescent. 12—18 i.

ensifolium, Bald. (E. M. 2f.) small, glabrous : leaves lance-ovate, very acute, spreading : panicle small, few-flowered : flowers sub-ovate, pubescent. 12—18 i.

barbulatum, Mx. (E. J. 2f.) panicle compound, spreading : leaves lance-ovate, sub-acuminate, sub-divaricate : joints of the stem bearded.

miliaceum, Mx. (E.) stem weak : leaves narrow : panicle contracted : glumes membranaceous, lanceolate, nearly equal : rudiments of a floret on a short footstalk.

angustifolium, E. (E. M. ?) panicle few-flowered, spreading : leaves scattered, lance-linear, glabrous beneath, sparingly ciliate. 1—3 f.

divergens, E. (E. Au. 2f.) stem assurgent, fragile : panicle diffuse : flowers small, solitary, very long-peduncled. 1 f.

laxiflorum, Lk. (☼.) panicle spreading, lax, pilose : glumes scattered, obtuse, pubescent.

microcarpon, M. (E.) panicle capillary, very branching, expanding : flowers oval, minute, glabrous : leaves lance-linear, very glabrous.

Hierochloa.

Panicum, PENNISETUM.

12—1. PAPAVER. 27. 62.

nudicaule, W. (E. y. ♂.) capsule hispid : scape 1-flowered, naked, hispid : leaves sub-pinnate ; leafets lanceolate ; lower ones somewhat gashed. Labrador.

Exotic.

rhœas, (wild poppy. r. J. ☼.) capsules glabrous, sub-globose : stem many-flowered, pilose, with the hairs spreading : leaves gash-pinnatifid. Naturalized.

somniferum, (opium poppy. J. ☼.) calyx and capsule glabrous : leaves clasping, gashed, glaucous.

Chelidonium.

19—4. PARIETARIA. 53. 98.

pennsylvanica, (pellitory. O. J. ☼.) leaves lance-oblong, veiny, with opake punctures : involucre 3-leaved, longer than the flower. 12—15 i. *S.*

Southern.

floridana, N. (E. J.) leaves ovate, roundish, obtuse, opake, dotted : flowers clustered as long as the involucre : stem assurgent. 12—18 i. Morus.

21—5. PARMELIA. 57. 2.

1. *Divisions of the fronds all equal at the apex.*

caperata, (shield lichen.) frond orbicular, pale-yellow becoming green, rugose, at length granulated, dark and hispid beneath : lobes plicate, sinuate-laciniate, roundish, somewhat entire : receptacles scattered, sub-fuscous : margin incurved, entire, at length pulverulent. Var. *cytisphora*, smoothish, naked : lobes gash-crenate : receptacles of the central lobes margined, elevated, small. On old timber, &c.

galbina, frond orbicular, smooth becoming cinereous ; the outer margin lead-en-blue, with dark punctures, dark beneath, hispid with spongy fibres : lobes imbricate, flat, sinuate-laciniate, crenate : central receptacles concave, dark-purple, shining : margin entire. On old wood.

crinita, Ach. frond grayish-green, bearing branching coralline papillae, underneath smooth, black : margin ciliated. On trunks and stones.

borreri, Ach. frond grey with whitish soredia : receptacles with a crenate, sub-lobed margin. On bark and mosses.

perlata, Ach. frond greyish-green, villose beneath. On trunks and stones.

plumbea, Ach. frond dark lead, and blackish when old. Earth on mosses.

aleurites, Ach. frond generally covered with granular dust, much torn at the margin : receptacle light, margin crenulated. On bark.

rutilans, Ach. frond deep yellow, whitish underneath ; receptacles orange. On bark.

venusta, Ach. frond deeply gashed ; segments narrow : margin of the receptacle leafy. Bark and among mosses.

cycloselis, Ach. frond stellate, segments short, broad, sub-connate : receptacle blackish. On trunks.

placorodia, frond orbicular, smooth, pale-livid, sprinkled with black elevated specks, glabrous, rugose, milky beneath, with dark-cinereous impressions : divisions plicate, concrete, round-crisped, crenate at the apex : receptacles scattered, elevated, light-fuscous, somewhat concealed by the inflexed, rugose, crenate margin. On decaying woods.

crinita, frond orbicular, from white becoming pale-glaucous, scabrous, with scattered grains and corol-like branchlets, dark glabrous, a little rugose beneath, rarely fibrous : divisions rather long, sinuate-lobed at the margin, and erose-crenate ciliate, obtuse at the apex.

rudecta, frond orbicular, pale-cinereous, becoming green, thickly beset with corol-like apophyses of an uniform colour, dirty white, wrinkled and fibrous beneath : divisions concrete, undulate-plicate, roundish at the margin, torn-crenate : receptacles scattered, small, obscurely fuscous : margin thin, at length rugose-crenate. On old wood.

scortea, frond orbicular, sub-coriaceous, white, glabrous, very thin, dark-punctate, dark-fibrous, hispid beneath : lobes longish, sinuate-crenate, gashed : receptacles red-fuscous, sub-entire at the margins. On rocks and trunks of trees.

perforata, frond orbicular, becoming glaucous-green, naked, dark-fibrous beneath : lobes round, gashed, flat, sub-plicate, crenate, ciliate at the margin : receptacles reddish-yellow, at length perforated : margin entire. On trunks of trees, very common.

herbacea, frond orbicular, membranaceous-herbaceous, naked, pale-fuscous, tomentose beneath : lobes gash-sinuate, round-laciniate, repand, sub-crenate : receptacles reddish-yellow : margin inflexed, rugose-crenate. On trunks of trees and rocks among moss.

tiliacea, frond orbicular, membranaceous, becoming glaucous-cinereous, somewhat hoary, dark-fuscous beneath, with black fibres : lobes sinuate-laciniate, the extreme ones round, crenate : receptacles sub-fuscous : margin sub-entire. On the bark of trees.

sub-marginalis, frond membranaceous, smoothish, becoming cinereous, very dark beneath, becoming fuscous at the periphery : receptacles somewhat margined, concave, fuscous, wrinkled outside : margin simple. On trunks of trees.

olivacea, frond orbicular, dark-olive, wrinkled, having elevated specks, pale becoming fuscous, scabrous and somewhat fibrous beneath : lobes radiated, close-pressed, flat, dilated, round-crenate : receptacles flattish, somewhat uniform-coloured : margin crenulate. On trunks of trees, split rails, &c.

parietina, frond orbicular, very yellow, pale, somewhat fibrous beneath : lobes radiating, close-pressed, flat, dilated, round-crenate and crisped at the apex : receptacles uniform-coloured : margin entire. On walls, old fences, rocks, trunks of trees, &c.

setosa, frond stellate, becoming white-glaucous, becoming ragged beneath, with dark-hispid, ramose, interwoven fibres : divisions many-cleft, linear,

separated, flat : margins here and there bearing fruit-dots : ciliæ very dense and long.

saxatilis, frond orbicular, becoming cinereous, a little scabrous, lacunose-reticulate, black and fibrous beneath : divisions imbricate, sinuate-lobed, flat, sub-retuse and dilated, round : receptacles liver-brown : margin crenate. On rocks and trunks of trees.

aquila, frond orbicular, fuscous, chesnut-brown, paler beneath, and dark-fibrous : divisions many-parted, sub-linear, convex ; the periphery dilated, flattish, crenate : receptacles dark-fuscous : margin crenulate. On rocks and mountains.

michauxii, frond somewhat olive-colour, a little shining : divisions convex, sinuate-lobed, dilated at the apex : receptacles chesnut-fuscous. On rocks.

congruens, frond stellate, becoming pale-white and fuscous-cinereous beneath, the fibres and impressions uniform-coloured : divisions many-cleft, lax, flexuose : margins recurved, flattish and crenate at the apex : receptacles elevated, concave, liver-like : margin entire. On trunks of trees.

centrifuga, frond orbicular, with greenish-white zones receding from the centre ; white beneath, with fuscous-cinereous fibres : divisions concrete, convex-rugose, parted dichotomously, obtusish : receptacles with reddish-fuscous peripheries : margins sub-entire. On mountains and rocks.

conspersa, frond orbicular, pale-livid, smooth, dark-punctate, becoming fuscous and fibrous beneath : divisions sinuate-lobed, round crenate, flattish : receptacles central, chesnut-brown : margin sub-entire. On stones and rocks.

diversicolor, frond sub-orbicular, golden-yellow, concrete, with the rugose, narrow, torn-ramose divisions white with age, becoming white-cinereous beneath, and the impressions uniform-coloured : receptacles crowded, concave, dark-red : margin thick, at length white.

speciosa, frond stellate, glabrous, white becoming sub-cinereous, white softish beneath, with obscure marginal fibres : divisions imbricate, flat, gash-ramose, crenate, the ascending crenatures pulverulent : receptacles central, sub-fuscous : margin inflexed, tumid, at length rugose-crenate. On rocks and trunks of trees.

hypoleuca, frond stellate, white, glabrous, naked, very white, soft, sub-tomentose beneath, with hispid, dark, marginal fibres : divisions linear, many-cleft, flat : receptacles scattered, sub-fuscous, at length black : margin inflexed, at length crenulate. On trunks of trees, on and among mosses.

lophyrea, frond stellate, white, dark, smooth, naked, excavated-punctate beneath : divisions linear, flat, flexuose, sinuate, many-cleft : receptacles reddish : margin sub-crenate.

granulifera, frond orbicular, white, hoary and granular, sprinkled over with snow-white heaps of globules, glabrous, one-coloured beneath, fibres and impressions dark : divisions flat, many-cleft, tooth-crenate ; margins naked : receptacles dark-fuscous : margin inflexed, granulated. Among mosses on trunks of trees.

conoplea, frond orbicular, becoming glaucous-green, here and there covered with granulated dust becoming blue, dark, with spongy fibres beneath : divisions with flattish, round-lobed, crenate, naked outer edges ; margins elevated, pulverulent : receptacles reddish-yellow. On mosses and trunks of trees.

obsessa, frond orbicular, white, beset with a corol-like excrescence, apex fuscous, dark, fibrous beneath : divisions with a separate solitary periphery, erose-many-cleft, flat : receptacles central, flat, dark-fuscous : margin granulate-toothed. On the bark of trees.

pulverulenta, frond stellate, light-grey-hoary ; dark, tomentose-hispid beneath : divisions linear, many-cleft, separated in the periphery, flat, close-pressed, undulated, retuse at the apex : receptacles grey : margin entire and flexuose. On the bark of trunks of trees.

aipolia, frond stellate, becoming white-cinereous, grey and naked, white beneath, with dark-fuscous fibres: divisions all sub-connate, flattish, many-cleft and lobed: receptacles dark-grey-hoary. On the bark of trees.

stellaris, frond stellate, at length rugose-plicate, becoming green-cinereous, white, fibrous-cinereous beneath: divisions sub-linear, somewhat convex, gashed, many-cleft: receptacles becoming dark-glaucous: margin entire, at length flexuose and crenate. On the bark of trees.

exsia, frond stellate, becoming white-cinereous and grey, bearing fruit-dots, cinereous beneath, with dark fibres: divisions linear, gashed, many-cleft, somewhat convex, the extremities flat; receptacles sub-concave, black: margin sub-inflexed. On rocks, woods, on mosses and bark of trees.

ulothrix, frond stellate, cinereous-glaucous, sub-livid, dark-fibrous beneath: divisions separated, linear, dichotomous, many-cleft, flat, sub-ciliate: receptacles dark-fuscous: margin entire, ciliate-fibrous beneath. On bark and trunks of trees.

2. Divisions of the frond sub-inflated at the apex.

physodes, frond sub-stellate, becoming white-glaucous: divisions imbricate, sinuate multifid, somewhat convex, glabrous, inflated and ascending at the apex: receptacles red, with entire margins. On split wood, rails, rocks and trunks of trees.

cristulata, frond orbicular, becoming green-glaucous: divisions very smooth, flat: periphery round, incumbent, gash-crenate; all spongy and dark beneath, sub-inflated at the apex: receptacles red: margin entire. On the roots of trees.

colpodes, frond sub-stellate, becoming pale-green: divisions many-cleft, smooth, naked, flattish, sub-inflated at the apex, dark-ragged beneath: receptacles sub-fuscous: margin sub-rugose. On bark of trees.

enteromorpha, frond sub-stellate, becoming whitish-green: divisions elongated, sub-divided, effuse, lax, sub-rugose, inflated, dark, rugose-plicate beneath: receptacles liver-brown: margin entire. On trunks of pines, &c.

Borrera.

5—4. PARNASSIA. 14. 64.

americana, M. (1) (flowering plantain. w. y. p. Ju. 2[.) leaves radical (often a leaf on the scape) heart-orbicular, 5 to 9-nerved: nectaries five, each divided into 3 filaments terminated by little spherical heads. Damp or wet. 6—18 i. *S.*

palustris, W. (w-y. Ju. 2[.) radical leaves cordate: nectaries many bristled.

Southern.

asarifolia, Vent. (A. Au. 2[.) radical leaves reniform: petals clawed: nectaries 3-cleft. Aralia.

Paronychyia, QUERIA.

17—4. PARTHENIUM. 49. 55.

Southern.

integrifolium, (A. w. S. 2[.) leaves oblong, unequally toothed, rough; upper ones clasping. 1—2 f. Chrysogonum.

3—2. PASPALUM. 4. 10.

ciliatifolium, Mx. (2) (E. S. 2[.) culm decumbent: leaves hairy, ciliate: sheaths hairy: spikes 1—2, rather lax, indistinctly 3-rowed. 18 i. *S.*

setaceum, Mx. (3) (E. 2[.) culm erect: leaves and sheaths villous: spike subsolitary: flowers in 2-rows. 1—2 f. *S.*

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(1) caroliniana, Mx. (2) ciliatum, Ph. dasyphyllum, E. (3) pubescens, M.

laeve, Mx. (E. S. 2f.) erect, very smooth: leaves short: spikes numerous, (3—6,) alternate: flowers 2-rowed, smooth. 2 f. *S.*

stoloniferum, Bosc. (E. Au.) spikes in elongated racemes, somewhat whorled, spreading: flowers serrulate-ciliate, transversely rugose: leaves short, subcordate: culm procumbent at the base. 2 f.

Southern.

debile, Mx. (E.) stem weak: leaves and stem hairy: spike generally one, slender: flowers alternate, one-rowed.

floridanum, Mx. (E. Au.) stem erect: lower leaves very villose; upper ones scabrous pilose: sheaths very long: spikes few: flowers in 2-rows, glabrous, large. 3—4 f.

plicatulum, Mx. (E.) glabrous: stem erect: leaves long, narrow: spikes numerous, alternate, erect: flowers in 3 rows; the flat valve transversely plaited near the margins.

praecox, Wr. (E. Ju.) stem erect: leaves lance-linear, glabrous: spikes numerous, alternate: rachis narrow, hairy at the base: flowers in 3 rows.

purpurascens, E. (E. Au.) stem erectish: leaves long, purplish, hairy at the throat: spikes numerous, villose at the base: flowers in 4 rows.

distichum, Wr. (E. Ju. 2f.) stem creeping: leaves short, sub-glaucous, shining: spikes 2, one sessile: glumes lanceolate.

vaginatum, E. (E. Ju.) very glabrous: stem creeping, branching: leaves linear: spikes generally 2, terminal, sheathed by a terminal leaf. 12—18 i.

Milium.

15—5. PASSIFLORA. 34. 97.

lutea, (yellow passion-flower. y. S. 2f.) leaves cordate, 3-lobed, obtuse, glabrous: petioles glandless: peduncles axillary, in pairs: petals much narrower than the calyx.

incarnata, W. (E. w. & p. Ju. 2f.) leaves 3-lobed, serrate; lobes oblong, acute: petioles with two glands: involucre 3-leaved; leaves lanceolate, glandular-dentate: threads of the crown longer than the corol.

Exotic.

caerulea, (blue passion-flower. b. Ju. ♄.) leaves palmate, 5-parted, entire: petioles glandular: involucre 3-leaved, entire: threads of the crown shorter than the corol.

alata, (winged passion-flower. Oct. ♄.) leaves oblong-ovate, sub-cordate, entire, veiny: petioles with 4 glands: stipules lance-falcate, sub-serrate: involucre 3-leaved: stem 4-cornered, membranaceous.

Southern.

peltata, W. (♄.) leaves peltate, deeply 3-lobed, glabrous; lobes lance-linear, divaricate: petioles with 2 glands: peduncles solitary, axillary: petals o.

scarei, N. (E. 2f.) lower leaves 3-lobed, acute; upper ones undivided, ovate: petioles with 2 glands: peduncles somewhat in pairs. 4—6 i. Erodium.

5—2. PASTINACA. 45. 60.

Exotic.

sativa, (parsnip. y. Au. ♂.) leaves simply pinnate: leafets glabrous. Var. *arvensis*, leafets sub-pubescent. This variety is often found in situations which almost prove it to be indigenous. **Thapsia.**

Pastinaca, ŒNANTHE.

17—2. PECTIS. 49. 55.

Southern.

angustifolius, T. & J. (A. y. ☼.) stem branching at the base, diffuse: leaves narrow-linear, mucronate, denticulate at the base; teeth terminating in hairs: flowers terminal, solitary, short peduncled: calyx 8-leaved: chaff short, 5-toothed. 1—2 i. **Pyrethrum.**

13—2. PEDICULARIS. 40. 35.

canadensis, (louse-wort. O. y-p. M. 2f.) stem simple: leaves pinnatifid, gash-toothed: heads leafy at the base, hirsute: corol with a setaceous, 2-toothed upper lip: calyx obliquely truncate. 6—12 i. *S.*

gladiata, Mx. (high heal-all. O. y-p. J. 2f.) stem simple: leaves lanceolate, pinnatifid, toothed: spikes leafy, with alternate florets: capsules lengthened into an exsert, sword-mucronate-form. 1—2 f. *S.*

pallida, P. (1) (E. y. Ju. 2f) stem branching, tall: leaves sub-opposite, lanceolate, crenate, toothed: spikes leafless, glabrous: upper lip of the corol obtuse: calyx 2-cleft, roundish. 2—3 f. *S.*

resupinata, W. (p. Ju. 2f.) stem simple, glabrous: leaves lanceolate, toothed, crenate: calyx bifid-truncate: upper lip of the corol acute.

hirsuta, (r. 2f.) stem simple: leaves pinnate; leafets lanceolate, obtusely toothed: calyx hirsute, 5-cleft: upper lip of the corol very obtuse.

euphrasioides, W. (E. y. 2f.) stem branching, pubescent: leaves pinnatifid, toothed: calyx tubular, 2-parted, truncate: upper lip of the corol 2-toothed. Labrador. 6—8 i.

recutita, W. (W. p. Ju. 2f.) stem simple: leaves deeply pinnatifid; divisions lanceolate, pinnatifid toothed: spike compact, leafy: calyx glabrous, 5-toothed: upper lip of the corol very obtuse.

elata, W. (W. p. Ju. 2f.) stem simple: leaves deeply pinnatifid; divisions lance-linear, crenate: spike lax, somewhat leafy: calyx glabrous, 5-toothed: upper lip of the corol obtuse, truncate. 2 f.

lapponica, W. (E. y. Ju. 2f.) stem simple: leaves pinnatifid; divisions serrate: calyx 2-cleft, oblong: upper lip of the corol uncinate, truncate. Labrador.

groenlandica, W. (W. p. Ju. 2f.) stem simple: leaves deeply pinnatifid; divisions lanceolate, acuminate, serrate: calyx glabrous, 5-toothed: corol closed; upper lip uncinate-subulate.

verticillata, Ph. (W. p. 2f.) stem simple: cauline leaves deeply pinnatifid, in fours; divisions linear, acutely toothed: spike capitate, involucred: calyx villose, 5-cleft: upper lip of the corol very obtuse. 2 i.

flammea, W. (E. y. & r. 2f.) stem simple: leaves pinnate; leafets imbricate, ovate, obtuse, doubly toothed: calyx 5-toothed: upper lip of the corol obtuse. Labrador. 3 i. Mimulus.

15—7. PELARGONIUM. 14. 73.

Exotic.

1. *Nearly stemless: root tuberous.*

triste, (mourning geranium.) umbel simple: leaves rough-haired, pinnate. leafets bipinnatifid; divisions oblong, acute. Flowers dark-green.

daucifolium, (carrot geranium. 2f.) scape very simple. leaves thrice pinnate, hirsute: leafets lance-linear.

2. *Leaves simple, not angled.*

odoratissimum, (sweet-scented geranium. ♄.) peduncles sub-5-flowered: leaves round-cordate, very soft.

3. *Leaves simple, more or less angled or lobed.*

zonale, (horse-shoe geranium. ♄.) umbels many flowered: leaves heart-orbicular, obsoletely lobed, toothed, with a coloured zone or band around near the margin.

inquinans, (scarlet geranium. ♄.) umbels many-flowered: leaves round-reniform, hardly divided, crenate, viscid-downy.

(1) serotina, M. lanceolata, Mx.

acerifolium, (lemon or maple-leaf geranium. ♄.) umbels about 5-flowered: leaves 5-lobe-palmate, serrate; below wedge-form, undivided.
capitatum, (rose-scented geranium. ♄.) flowers capitate: leaves cordate, lobed, waved, soft: stem diffuse.
quercifolium, (oak-leaf geranium. ♄.) umbels sub-many-flowered: leaves cordate, pinnatifid, crenate: sinuses rounded: filaments ascending at the apex.
graveolens, (sweet-rose geranium. ♄.) umbels many-flowered, sub-capitate: leaves palmate-7-lobed; divisions oblong, obtuse; margins revolute.

Remark. These are all the species which I have seen in Troy, Albany, Northampton, or any other town in the interior: but I have seen 20 or 30 other species in New-York. To include all these would be giving too much room to one genus of exotics, which is not among the common cultivated exotics promised in the title-page. Pistia.

21—5. PELTIDEA. 57. 2.

scutata, (target lichen.) frond becoming cinereous; whiter and nearly veinless beneath: lobes round, gash-sinuate, crenate-crisped; fertile lobes very short: receptacles round, ascending, flattish, fuscous, sub-entire. On trunks of trees.
horizontalis, frond becoming fuscous-glaucous-green, glabrous; very white and reticulate, with black veins beneath: fertile lobes very short: receptacles terminal, flat, horizontal, transversely oblong, liver-brown, entire. On rocks among mosses in mountain woods.
venosa, frond cinereous-green; veins beneath ramose, shooting out at a distance, fuscous-cinereous: lobes round, gashed, sub-entire: receptacles margined, flat, round, tumid, obscurely fuscous, sub-crenulate. On the earth at the margins of ditches, &c.
aphthosa, frond becoming livid-green, smooth; knobs wart-like, close-pressed: receptacle with black veins: fertile lobes rather long, narrow in the middle, reflexed at the margin: receptacles terminal, full, ascending, red; margin like the frond, inflexed, sub-lanceolate. On the earth, and in woods.
canina, frond becoming cinereous-green, sub-tomentose; reticulate beneath, with cinereous-fuscous veins: fertile lobes longish, reflexed at the margin: receptacles terminal, erectish, revolute, reddish-yellow: margin like the frond, thin, sub-crenulate. On the earth in mountain woods, and on mosses.
polydactyla, frond becoming glaucous-green, naked, glabrous: reticulate, with fuscous veins beneath: fertile lobes very thick, elongated, and the terminal receptacles obscurely fuscous: margins cucullate-revolute. On the earth in woods and bush-fields. Nephroma.

3—2. PENNISETUM. (1) 4. 10.

viride, (E. Ju. ☼.) spike cylindrical: involucre of 4—10 fasiculate bristles, scabrous upwards: spikelets in pairs: perfect floret smooth: sheaths pubescent. Introduced. 18—24 i.
glaucum, (fox-tail panic. O. J. ☼.) spike cylindrical: involucre of many fascicled bristles, scabrous upwards: perfect floret transversely rugose. Var. *purpurascens*, sheaths hairy: glumes and bristles of the involucre hairy. Introduced. 2 f. *S.*
verticillati, (2) (E. Ju. ☼.) spike somewhat whorled: bristles of the involucre 2, scabrous backwards: spikelets solitary: corol of the perfect floret smoothish. Introduced. 18 i.
italicum, (3) (E. Ju. ☼.) spike compound, interrupted at the base, nodding: spikelets conglomerate: involucres much longer than the flowers: rachis tomentose. Introduced. 4 f. *S.*

(1) Panicum, L. Setaria, Pb. (2) Panicum alopecuroideum, Wr. (3) Setaria, Pb.

germanicum, W. (3) (bengal grass. E. Ju. ☉.) spike compound compact: spikelets glomerate: rachis hirsute: bristles short. Introduced. 2—4 f.

Southern.

pungens, N. (4) (E. ♃.?) spike terete, strict: involucre many-parted, 1-flowered; segments terete, subulate, rigid, scabrous, a little longer than the florets.

laevigatum, M. (5) (E. Ju. ♃.?) very smooth: stem compressed: spike columnar: spikelets 1-flowered: involucels 10-awned. 1—2 f.

corrugatum, E. (6) (E.) spike terete, compound, bristly: spikelets many-flowered, (7—10): corol transversely rugose. 2—3 f. Digitaria.

10—5. PENTHORUM. 13. 83.

sedoides, (virginian orpine. O. g-y. Ju. ♃.) stem branching, angled: leaves lanceolate, sub-sessile, unequally and densely serrate: spikes secund, terminal, panicled, alternate and cymed: seeds pitted. 12—18 i. *S.* Sedum.

13—2. PENTSTEMON. 40. 45.

pubescens, W. (7) (beard-tongue. O. w-p. J. ♃.) stem hairy: leaves serrulate, lance-oblong, sessile: flowers panicled: the barren filament bearded from the apex to below the middle. Var. *latifolia*, has broad smooth leaves. Var. *angustifolia*, has narrow, hairy, obscurely denticulate leaves. 1—2 f. *S.*

laevigata, W. (8) w-p. Ju. ♃.) stem glabrous: leaves smooth, oblong-ovate, clasping at the base, slenderly toothed, lower ones entire: flowers panicled: barren filament bearded above. 2 f. *S.*

frutescens, Lb. (W. p. ♄.) stem fruticose: branches angled, pubescent above: leaves lanceolate, obsoletely denticulate, sessile, nearly glabrous: raceme terminal, sub-corymbed: sterile filament bearded. 12—18 i.

Southern.

cristatum, N. (9) (W. p. ♃.) stem low, pubescent: leaves oblong, acute, obsoletely denticulate, sub-hirsute: pedicels axiliary and terminal, 1—3-flowered, very short: sterile filament exsert, revolute at the apex, bearded: divisions of the calyx lance-linear, acuminate, hirsute. 6—8 i.

coeruleum, N. (1) (W. b. ♃.) smooth: radical leaves linear, entire: cauline ones lance-linear, entire, all sessile: sterile filament short, bearded above: divisions of the calyx lanceolate, acute, glabrous.

crianthera, N. (2) (W. p. J. ♃.) stem and leaves glabrous: leaves sessile, lance-ovate, entire, sub-undulate at the margin: pedunicles many flowered, secund: divisions of the calyx round-oval, acuminate: sterile filament slightly bearded under the retuse point: anthers pubescent.

grandiflorum, N. (0) (W.) very glabrous: leaves half-clasping, ovate-oblong, entire; upper ones roundish: flowers solitary and axillary: sterile filament partly pubescent at the summit: divisions of the calyx oblong, acute.

gracile, N. (W. p. J.) stem smooth, slender: leaves smooth, linear, acute, half clasping, sharp-serrulate: sterile filament bearded longitudinally: divisions of the calyx linear-oblong.

albidum, N. (W. w.) low: leaves lance-ovate, sub-serrulate, smooth, sessile: flowers sub-fascicled, axillary and terminal: sterile filament slenderly and interruptedly bearded: divisions of the calyx lance-linear, pubescent. 6—8 i.

dissectum, E. (E. p.) leaves opposite, sessile, compoundly divided: segments linear, and generally obtuse: flowers panicled. 2 f.

nuttallii, Bk. (W.) very glabrous: leaves coriaceous, lance-ovate, denticu-

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(3) Panicum, W. (4) Panicum cenchroides, E. (5) Panicum, M. (6) Panicum, E. (7) Chelone penstemon, Mant. (8) Chelone, Miller. (9) crianthera, Ph. (1) angustifolia, Ph. (2) glabra, Ph. (0) Bradburii, Ph

late, half-clasping : flowers panicled : leafets of the calyx ovate, acuminate : sterile filament bearded at the apex : anthers glabrous. 2—3 f.

alpina, T. & J. (W. b.) very glabrous : corol somewhat bell-form ; limb nearly equal, 5-lobed : leaves lance-oblong, crenulate-denticulate on the margin : divisions of the calyx lanceolate, acute : anthers hirsute : sterile filament shorter than the two longest stamens, bearded below the retuse apex. 6 i.

ambiguum, T. & J. (W. p.) stem fruticose, very branching : leaves linear, shining, concave, mucronate, scabrous on the margin : panicle simple : divisions of the calyx ovate, acuminate : sterile filament glabrous. 8—10 i.

Martynia.

Peplis, CRYPTA.

5—2. PERIPLOCA. 30. 47.

graeca, (milk vine. W. p. M. ♄.) flowers hirsute within, terminal : stigma with 10 crenatures Podostigma.

Peritoma, CLEOME.

16—5. PETALOSTEMON. (1) 32. 93.

candidum, W. (2) (W. w. Ju. 2f.) spike cylindric, peduncled : bracts longer than the flower : calyx glabrous : leaves lanceolate, in 3 pairs. *S.*

violaceum, W. (W. r-p. Au. 2f.) spike cylindric, peduncled : bracts about equal to the calyx ; little bracts spatulate, caducous : calyx silky : leaves linear, in 2 pairs.

villosum, N. (W. r. Au. 2f.) villous : stem decumbent : spike large, cylindric, sub-sessile : bracts shorter than the woolly, 5-toothed calyx : leafets linear-oblong, about 7-pairs.

Southern.

carneum, Mx. (E. w. Ju. 2f.) spike cylindric, peduncled : bracts subulate, as long as the glabrous calyx : leafets lanceolate. 2—3 f.

corymbosum, Mx. (3) (E. w. S. 2f.) peduncles in panicled corymbs : calyx plumose : leafets linear, unawned. 2 f.

macrostachyum, T. & J. (W. w. 2f.) spike cylindric, compact, very long : bracts lanceolate, and with the calyx silky-villose : leafets about in 3 pairs, lance-oblong, glabrous. 2 f.

roseum, N. (E. r.) glabrous : leafets linear : bracts subulate, very short, persistent : calyx striate, glabrous. Pisum.

Petalostemon, DALEA.

5—2. PEUCEDANUM. 45. 60.

Southern.

ternatum, N. (E. 2f.) leaves ternate, long-petioled ; leafets entire, long-linear, acute, alternated below : involucre nearly wanting : involucel very short, 5—6-leaved : fruit oblong-oval. 3 f. Hydrocotyle.

21—6. PEZIZA. 58. 1.

1. Tremelloideæ. *Substance more or less tremulous.*

inquinans, in groups, large, dark stained, at length convex, ob-conic ; rugose and brownish outside. Often grows in long series in autumn, along hewn or cut timber.

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(1) Dalea, W. (2) Dalea, Jn. (3) kuhnistera, W. Kuhnistera carolinensis, Lk.

sarcoides, cespitose, fleshy-tremulous, somewhat firm in texture, flesh-red, somewhat veiny outside. In autumn, on cut decaying trunks, &c.
cinerea, in groups, small, cinereous or pale, sub-tremulous: margin whiter, sub-erect. On decaying trunks and branches, in spring and autumn.

2. Helvelloideæ. *Larger, fleshy-membranaceous, fragile: externally sub-farinaceous.*

aurantia, stemless, cespitose, halved-flexuose, golden-yellow, white externally, coccinea, Bull. In autumn, on roots and decaying trunks, &c.
umbrina, large, cespitose, contorted, brown. On sandy grass-ground, &c.
badia, almost stemless, entire; margin sub-involute, obscurely fuscous; externally somewhat olive-coloured. An inch and a half broad. In autumn, on the earth, on trunks, &c. in woods.
depressa, sub-orbicular, sessile, depressed, reddish-yellow. Var. *applanata*, cinnamon-colour, expanded; flat and rugose above, paler beneath. In fields on the margin of rivers, &c.
acetabulum, wine-glass-form, stiped; pileus angled outside: veins branching: colour earth-brown fuscous. Stipe thick, lacunose, as in some species of Helvella. In shades.

3. *Mostly small. Whole pileus strigose-hirsute, pilose, tomentose, or pubescent.*

hemispherica, in groups, pretty large, hemispheric; white glaucous within, brown outside. Half an inch broad. In autumn on the earth, rarely on trunks.
scutellata, largish, spread-flattened, reddish-yellow outside: hispid, with dark diverging bristles. On wood in damp places.
coccinea, stiped, largish, turbinate or funnel-form: scarlet within, white without and somewhat downy; margin mostly crenate. In the spring on the earth and dead limbs.
anomala, stiped, crusty-crowded, turbinate; dry, crisped, ferruginous or fawn-colour; mouth converging, paler. In spring and autumn on dry fallen branches.

4. *Mostly small. Wholly glabrous (or at least not manifestly tomentose) fleshy or wax-like.*

(Pileus stiped.)

solaris, largish, sub-solitary: pileus orbicular-funnel-form; outside often rugose-veiny and a little fibrous: stipe thick, becoming dark at the base, shortish. In autumn on dry stipes, &c.
cyathoidea, in groups, small, white or pale: pileus wine-glass-form, unarmed, rather thin: stipe long, a little thicker downwards. On the dry stems of large herbs—stipes about the fourth of an inch long.
lutescens, small, somewhat in groups, becoming yellow: pileus orbicular: stipe thin, cylindric. On the decaying wood of firs, &c.
pallescens, crowded, glabrous, white, at length becoming pale: pileus somewhat funnel-form: stipe rather thick. On trunks of beech, &c.

(Pileus sessile.)

leucoloma, narrow, depressed, spread, minute: margin white, finely torn. On walls and moss in the spring.

5. *More or less coriaceous, dry, glabrous, or pulverulent; mostly sessile.*

leucomela, bursting: sessile: pileus concave, dark outside and white within. Sometimes on hazle branches.
patellaria, in groups, dark, spread flattened, sub-coriaceous, distinctly margined. On dry branches of basswood, and sometimes on trunks of oak.
pinastri, scattered, sub-stiped, dark-shining; margin acute. On the bark of pines and firs, &c.

16—10. PHACA. 32. 93.

Southern.

villosa, Mx. (1) (O. y. Ju. 2f.) nearly stemless, very villose: leafets oval, glabrous above: peduncles as long as the leaves: legumes hoary, very villose, assurgent, oblong.

triphyllus, Ph. (2) (W.) Described under Astragalus triphyllus.

Phaseolus.

5—1. PHACELIA. 28. 42.

bipinnatifida, Mx. (phacelia. W. b. M.) erect: leaves pinnatifid; divisions gash-lobed: racemes mostly bifid, oblong, many-flowered: divisions of the corol entire. 1 f. *S.*

fimbriata, Mx. (W. b. M. ☼.) ascending, hairy: leaves sessile, pinnatifid: divisions lanceolate, acute, entire, hispid-pilose above, glabrous beneath: racemes solitary; pedicels elongated: divisions of the corol ciliate-fringed. 1 f. *S.*

parviflora, P. (3) (E. b. M. ☼.) diffused, pubescent: leaves sub-sessile, pinnatifid; divisions oblong-obtusish, entire: racemes solitary: pedicels short: divisions of the corol round, entire. 6—8 i.

Southern.

integrifolia, T. & J. (W.) erect, pubescent: leaves petioled, ovate, crenate-serrate: racemes numerous, dense-flowered.

heterophylla, Ph. (W. b. Ju. ♂.) erect, hispid: leaves petioled, pinnatifid: divisions lanceolate, entire, nerved, terminal one elongated; floral leaves simple, lanceolate, petioled: racemes 2-cleft, dense-flowered: divisions of the corol entire.

Spigelia.

Phaethusa, SIEGESBECKIA.

6—1. PHALANGIUM. 10. 16.

esculentum, N. (4) (W. b. M. 2f.) root bulbous: scape longer than the linear carinate leaves: spike racemed: stigma minutely 3-cleft. 12—18 i. *S.*

Southern.

croceum, Mx. (5) (E. y. 2f.) root bulbous: scape much shorter than the grass like leaves: spike pyramidal: bracts short: seed sub-globose, smooth.

Narthecium.

3—2. PHALARIS. 4. 10.

americana, E. (6) (ribbon grass, wild canary grass. E. Ju. 2f.) panicle oblong, spiked: glumes of the calyx boat-shaped, serrulate: corol unequal: rudiments hairy. Var. *picta*, leaves variously striped. This variety is the ribbon grass of the gardens. 2—5 f. *S.*

canariensis, (canary grass. E. Ju. ☼.) panicle sub-spiked, ovate: calyx boat-form, entire at the apex: rudiments smooth. Introduced. 12 i.

Brachyelytrum.

Phalaris, AULAXANTHUS.

21—6. PHALLUS. 53. 1

impudicus, (morel.) stipe sieve-like, sub-oblique: pileus cellular, pervious at the top. Very nauseous. On the ground in autumn in fields and shady places.

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(1) Astragalus, Mx. (2) caespitosa, N. Astragalus, Ph. (3) Polemonium dubium, W. (4) quamash, Ph. (5) Ornithogalum? E. (6) arundinacea, Mx. Calamagrostis colorata, N.

præputiosus, stipe sieve-like, sub-incurved; involucre indusium-like. Nauseous. Amanita.

21—2. Phascum. 56. 4.

patens, caulescent, erect: capsule about sessile: leaves lance-ovate, serrate at top, spreading.

muticum, stemless: capsule sessile: leaves ovate, without points, concave, converging.

cervicollum, sub-caulescent: the leaves of the pericheth strait: peduncle incurved: capsule ovate. On dry gravelly earth.

subulatum, caulescent, erect: leaves lance-linear, spreading; the summits, from the broadish base, subulate, rigid: capsule sub-sessile.

coherens, sub-caulescent, simple: leaves ovate, acute: nerves solid, serrulate, erect: capsules with short bristles. Gymnostomum.

16—10. Phaseolus. 32. 93.

perennis, Wr. (1) (wild kidney-bean. E. p. Ju. 2[.) twining, wholly pubescent: leaves ternate, ovate, 3-nerved: racemes in pairs, longer than the leaves: peduncles in pairs: bracts obsolete: legumes peduncled. The macrostachyus of Elliott, *(Jour. Acad. Phil.* v. 1, p. 384.) is merely a robust variety of this plant. Torrey. *S.*

Exotic.

lunatus, W. (carolina bean, lima bean. g-w. Ju. ☼.) twining: legumes scymitar-form, sub-lunate, smooth: seeds compressed.

vulgaris, (common-pale-bean. p. w. Ju. ☼.) stem twining: racemes solitary, shorter than the leaves: peduncles in pairs: bracts smaller than the calyx, spreading: legumes pendulous. From the East Indies.

nanus, (bush bean, six weeks bean. ☼.) stem erect, smooth: bracts larger than the calyx: legumes pendulous, compressed, rugose. Seeds variously coloured.

multiflorus, (scarlet runner. r. w. Ju. ☼.) stem twining: racemes solitary, of the length of the leaves: peduncles in pairs: bracts close-pressed, smaller than the calyx: legumes pendulous. Strophostyles.

Phaseolus, Strophostyles.

Phellandrium, Œnanthe.

11—1. Philadelphus. 19. 89.

Exotic.

coronarius, (mock orange, false syringa. w. J. ♄.) styles distinct: leaves ovate, sub-dentate.

Southern.

inodorus, W. (scentless syringa. E. w. J. ♄.) leaves ovate, acuminate, entire: divisions of the calyx acute: style undivided, longer than the stamens: stigmas 4, oblong. Flowers large. Cultivated.

grandiflorus, W. (2) (scentless syringa. E. w. J. ♄.) leaves ovate, acuminate, denticulate: axils of the veins with fascicles of hairs beneath: divisions of the calyx acuminate: style undivided, longer than the stamens: stigmas 4, linear. Cultivated.

lewisii, Ph. (W. Ju. ♄.) leaves ovate, acute, sub-entire, ciliate on the margin: divisions of the calyx acute: style 3-cleft, as long as the stamens: stigmas 3.

hirsutus, N. (W. w. ♄.) leaves oblong-ovate, acute, sharply angular-denticulate, hirsute above, whitish-villous beneath: style and stigma undivided: peduncles 2-bracted near the summit. Chrysobalanus.

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(1) paniculatus, Mx. (2) inodorus, Mx.

15—5. PHILOXERUS. 14. 73.

Southern.

vermicularis, (1) (E. J. 2ℓ.) Described under Achyranthes vermicularis. Achyranthes.

3—2. PHLEUM. 4. 10.

pratense, (timothy grass. O. J. 2ℓ. and ♂.) spike cylindric, calyx mucronate-awned; keel ciliate: awn shorter than the calyx: culm erect. Introduced. 2—3 f. *S.*

alpinum, L. (A.) spike ovate or cylindric-ovate, hirsute or villose. Spike often blackish or dark purple. Ceresia.

5—1. PHLOX. 20. 44.

paniculata, (smooth-stem lichnidia. r. w. Ju. 2ℓ.) glabrous, erect: leaves lanceolate, narrowing gradually, flat; margins rough: corymbs panicled: divisions of the corol rounded: calyx awned. Cultivated. 2—3 f. *S.*

pyramidalis, S. (2) (A. p. J. 2ℓ.) erect, glabrous: stem scabrous: leaves heart-ovate, acute: panicle fastigiate, pyramidal: divisions of the corol wedge-truncate: teeth of the calyx sub-erect, lanceolate, acute. 2—3 f. *S.*

maculata, (spotted lichnidia. E. r. w. Ju. 2ℓ.) erect: stem spotted, scabrous: leaves lance-oblong, glabrous; margins rough: panicle oblong: flowers crowded: divisions of the corol rounded: teeth of the calyx acute, recurved. Var. *suaveolens*, (3) stem not spotted: corol white. 2 f. *S.*

aristata, Mx. (4) (E. r. w. J. 2ℓ.) weak, erect, viscid-pubescent: leaves lance-linear: panicle lax, fastigiate: pedicels somewhat in pairs: divisions of the corol somewhat obovate: tube curved, pubescent: teeth of the calyx long, subulate. Var. *virens*, corol reddish-purple. Var. *canescens*, corol whitish rose-colour. 18 i. *S.*

pilosa, (5) (creeping lichnidia. E. p. w. J. 2ℓ.) small, decumbent, pubescent: leaves lance-linear, short, roughish: corymbs sub-fastigiate: divisions of the corol round-obtuse; tube straightish, glabrous: teeth of the calyx subulate-acuminate. 12—18 i. *S.*

divaricata, (O. p-b. M. 2ℓ.) pubescent, (low, decumbent, Ph.) leaves lance-oval, upper ones alternate: branches divaricate, lax, few-flowered: divisions of the corol sub-obcordate: teeth of the calyx linear-subulate. 1—2 f. *S.*

reptans, Mx. (6) (E. b-p. J. 2ℓ.) stoloniferous-creeping, pubescent: radical leaves obovate-spatulate, cauline ones lance-oval: corymb spreading, few-flowered: divisions of the corol obovate: teeth of the calyx linear, reflexed. 8—18 i. *S.*

subulata, (mountain pink. O. r. M. 2ℓ.) caespitose, white pubescent: leaves linear, pungent, ciliate: corymbs few-flowered: pedicels 3-cleft: divisions of the corol wedge-form, emarginate: teeth of the calyx subulate, scarcely shorter than the tube of the corol. Cultivated. 3—6 i. *S.*

setacea, (W. r. J. 2ℓ.) caespitose, pubescent: leaves fascicled, subulate, pungent, ciliate: pedicels few, terminal, sub-umbelled: divisions of the corol wedge-form, emarginate: teeth of the calyx subulate, much shorter than the tube of the corol. *S.*

Southern.

undulata, W. (7) (A. b. Au. 2ℓ.) erect, glabrous: leaves lance-oblong, sub-undulate, scabrous on the margin: corymbs panicled: divisions of the corol sub-retuse: calyx awned. 2 f.

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(1) Illecebrum, L. (2) carolina, W. latifolia, Mx. (3) suavolens. Ph. (4) pilosa, C. (5) amoena, C. (6) stolonifera, C. and Ph. (7) paniculata, Mx.

carolina, W. (1) (E. p. Au. 2f.) erect: stem pubescent: leaves lance-ovate, smooth: corymb sub-fastigiate; branchlets about 3-flowered: divisions of the corol round: teeth of the calyx glabrous, lanceolate, erect.

glaberrima, (E. p. Ju. 2f.) caespitose: stem erect: leaves lance-linear, glabrous: corymbs small, terminal, sub-fastigiate: divisions of the corol roundish: teeth of the calyx lance-linear, acute.

speciosa, Ph. (W. w. & p. J. ♄.) erect, glabrous, frutescent, very branching: leaves linear; upper ones alternate, dilated at the base: racemes panicle-corymbed: divisions of the corol wedge-oblong, emarginate: teeth of the calyx subulate, equalling the tube.

ovata, W. (r-p. J. 2f.) erect, glabrous: radical leaves ovate, acute, somewhat fleshy; cauline ones lanceolate: corymbs sub-fastigiate: divisions of the corol undulate, retuse: teeth of the calyx linear, acute.

acuminata, Ph. (A. p. Au. 2f.) lower leaves spatulate-ovate, acuminate, slightly scabrous; upper ones lanceolate: corymbs terminal. 3—5 f.

nitida, Ph. (2) (E. p. J. 2f.) erect, glabrous: stem scabrous: leaves ovate-oblong, sub-coriaceous: corymbs fastigiate: divisions of the corol obovate, sub-retuse: teeth of the calyx lanceolate, mucronate. 18—24 i.

cordata, E. (E. Au.) leaves oblong-cordate, sub-acuminate, margin scabrous: corymbs panicled: teeth of the calyx long-awned. 1—2 f.

bifida, Bk. (W. p. Ap.) stem erect, branching, minute-pubescent: leaves lance-ovate and lance-linear, somewhat clasping, opposite and alternate, margin revolute, midrib ciliate: teeth of the calyx linear, acute, pilose: divisions of the corol wedge-form, deeply cleft. 4—6 i. Polemonium.

3—2. Phragmites. 4. 10.

communis, Trin. (3) (E. Au. 2f.) calyx about 5-flowered: florets longer than the calyx. 6—12 f. Glyceria.

13—1. Phryma. 40. 39.

Remark. In a note at p. 50, I suggested that the supposed capsule of some authors was the calyx closed upon the seed. Dr. Darlington has since corrected me. On a review of the subject, I feel authorized to say (as of the genus Verbena, p. 49,) that the supposed capsule is an *extra tegument*, or *aril*. It does not appear to me to present the analogies of a capsule.

leptostachia, (lopseed. O. p-w. 2f.) leaves ovate, coarsely serrate, petioled: spikes terminal, slender: flowers opposite. As the fruit approaches maturity, it lops down against the rachis. Dry woods. 2—3 f. *S.* Thymus.

3—1. Phyllactis. 48. 56.

Southern.

obovata, N. (W. Oc.) stemless: root fusiform: leaves radiating, linear-spatulate, obtuse, hirsute-pillose. Tripterella.

19—5. Phyllanthus. 38. 96.

obovatus, (4) (S. ☼.) leaves alternate, oval, obtuse, glabrous, somewhat distichous: flowers few, (2—4,) axillary, pedicelled, nodding: stem erect; branches distichous. 12 i. *S.* Melothria.

5—1. Physalis. 28. 41.

viscosa, (yellow henbane. O. y. Ju. 2f.) leaves in pairs, heart-oval, repand.

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(1) triflora, Mx.? (2) carolina, Wr. (3) Arundo phragmites, W. (4) carolinensis, Wr.

obtuse, sub-tomentose: stem panicled above: fruit bearing calyx pubescent. 1—3 f. *S.*

obscura, Mx. (1) (E. y. p. Ju.) leaves sub-cordate, orbicular, acuminate, unequally dentate: stem herbaceous, divaricate, much branched; branches angled: inflated calyx large. Var. *glabra*, (2) summit and petioles scarcely pubescent. Var. *pubescens*, viscid-pubescent.

pennsylvanica, (E. y. J. 2f.) leaves ovate, sub-repand, obtuse, nakedish: stem branching: peduncles solitary, a little longer than the petioles. 1 f. *S.*

philadelphica, Lk. (E. y. p. Ju. ☼.) leaves ovate, repand-toothed, glabrous: stem very branching, peduncles solitary, much shorter than the petioles. Probably a variety of the *obscura*. *S.*

lanceolata, Mx. (y. J. 2f.) leaves in pairs, lance-oval, sub-entire, gradually narrowing into the petiole, pubescent: stem dichotomous: calyx villose. *S.*

Exotic.

alkekengi, (common winter cherry. 2f.) leaves in pairs, entire, acute: stem sub-ramose below. Calyx of the fruit red or reddish.

Southern.

pubescens, W. (O. y. Ju. ☼.) leaves villose, viscous, sub-cordate: stem very branching: flowers solitary, pendulous: fruit-bearing calyx round-globose, angled.

somnifera, W. (E. y. Ju. 2f.) tomentose: leaves ovate, very entire: flowers crowded, short-pedicelled: corol bell-form.

lobata, T. & J. (W. g.) leaves oblong, somewhat fleshy, lyrate-lobed, narrowed into the petiole at the base, glabrous, revolute at the margin: stem herbaceous, branching: peduncles solitary. Solanum.

21—6. PHYSARUM. 58. 1.

cinereum, sessile, globe-ovate, cinereous; reticulate within with white threads. On trunks in autumn.

nutans, stiped, white-cinereous; fruit lenticular, glabrous, a little wrinkled, nodding. On trunks, leaves and mosses, in autumn, or in the summer after long storms.

aurantium, stiped: fruit roundish, becoming yellow: stipe striate, thickening downwards. On trunks.

farinaceum, stiped: bark of the fruit very thin, mealy-villose, cinereous. On branches of pines, on moss, &c. Trichia.

10—10. PHYTOLACCA. 54. 29.

decandra, (poke-weed. O. w. Ju. 2f.) leaves ovate, acute at both ends: flowers racemed: berries flattened at the ends. 3—6 f. *S.* Cactus.

21—2. PILOTRICHUM. 56. 4.

bipinnatum, stem 2-pinnate: branches 2-ranked, pinnate: leaves imbricate, ovate, 2-nerved: peduncles arcuate, short: capsules sub-cylindric, with a conic-subulate lid: calyptre sub-pilose. Climacium.

5—1. PINCKNEYA. 47. 57.

Southern.

pubens, Mx. (E. p. J. ♄.) leaves opposite, lanceolate, entire, thinly pilose and shining above, tomentose below, sub-acuminate: calyx superior, persistent, coloured. 15—20 f. Chiococca.

(1) pruinosa, E. (2) angulata, Wr.

2—1. PINGWICULA. 24. 40.

elatior, Mx. (W. M. 2ℓ.) nectary subulate, obtuse, shorter than the corol: tube ventricose above: scape villose beneath. 4—12 i. *S.*

Southern.

lutea, Wr. (E. y. Ap. 2ℓ.) border of the corol 5-cleft: divisions 2-lobed: lobes 2-toothed: spur subulate, a little shorter than the tube. 6—8 i.

pumila, Mx. (E. b. Ap. 2ℓ.) border of the corol 5-cleft: divisions emarginate: lobes entire: spur subulate, obtusish, as long as the tube. 3—5 i.

acutifolia, Mx. (W. Ju. 2ℓ.) very glabrous: leaves erect, oval, very acute. Hemianthus.

19—16. PINUS. 51. 100.

1. *Leaves solitary, with separate bases.* ABIES.

balsamea, W. (1) (fir tree, balsam tree. O. M. ♄.) leaves flat, emarginate or entire, glaucous beneath, sub-erect above, recurve-spreading: cones cylindric, erect: bracts abbreviated, obovate, long-mucronate, sub-serrulate. *S.*

fraseri, Ph. (double spruce. A. J. ♄.) leaves solitary, flat, emarginate, glaucous beneath, somewhat one-sided, thick above, erect: cones ovate-oblong, erect: bracts elongated, reflexed, wedge-oblong, emarginate, short-mucronate, gash-toothed. *S.*

taxifolia, Lb. (W. ♄.) leaves solitary, flat, sub-distichous: cones oblong: anthers didymous. *S.*

canadensis, (2) (hemlock tree. O. M. ♄.) leaves flat, denticulate, 2-ranked. strobiles ovate, terminal, scarcely longer than the leaves. The bark is used in tanning leather. *S.*

nigra, Lb. (3) (black spruce. A. M. ♄.) leaves 4-sided, scattered on all sides of the branchlets, erect, straight: strobiles ovate: scales oval, with undulate margins, erose-toothed at the apex. *S.*

rubra, Lb. (4) (red spruce, spruce fir. E. M. ♄.) leaves solitary, subulate: strobiles oblong, obtuse: scales rounded, sub-2-lobed: margin entire.

alba, Lb. (5) (white spruce. O. M. ♄.) leaves 4-sided, incurved: strobiles sub-cylindric, lax: scales obovate, entire.

2. *Leaves many, sheathed at the base.* PINUS.

(Leaves in pairs.)

resinosa, Lb. (6) (yellow pine, norway pine, red pine. O. M. ♄.) leaves and sheaths elongated: strobiles ovate-conic, rounded at the base, sub-solitary, about half as long as the leaves: scales dilated in the middle, unarmed. Bark of a reddish colour, and much smoother than the rigida and strobus. Often grows very tall and straight. *S.*

inops, Lb. (7) (jersey pine. E. M. ♄.) leaves short: strobiles oblong-conic, recurved, of the length of the leaves: prickles of the scales subulate, straight. *S.*

banksiana, Lb. (8) (scrub pine, grey pine. O. M. ♄.) leaves short, rigid, divaricate, oblique: strobiles recurved, twisted: scales without prickles.

(Leaves in threes.)

variabilis, Lb. (9) (three-leaved yellow pine. E. M. ♄.) part of the leaves in pairs, the others in threes, slender, channelled: strobiles ovate-conic, sub-solitary: prickles of the scales incurved. *S.*

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(1) Abies balsamifera, Mx. (2) americana, Du Roi. Abies canadensis, Mx. (3) mariana, Du Roi. Abies denticulata, Mx. (4) Abies pectinata, Lk. (5) laxa, Eh. canadensis, Du Roi. Abies alba, Mx. (6) rubra, Mx. (7) virginiana, Du Roi. (8) rupestris, Mx. hudsonia, Lk. sylvestris, A. (9) mitis, Mx.

rigida, (pitch pine. O. M. ♄.) leaves with abbreviated sheaths: staminate aments erect-incumbent: strobiles ovate, scattered or aggregated: spines of the scale reflexed. Though very common, it grows the most plentifully on barren sandy plains. *S.*

serotina, Mx. (pond pine. E. M. ♄.) leaves elongated: prickles of the scales straight and very slender. Probably a variety of the last. *S.*

(Leaves in fives.)

strobus, (white pine. O. M. ♄.) leaves slender: sheaths short: strobiles pendant, cylindric, longer than the leaves: scales somewhat lax. This is called Weymouth pine by the English. Perhaps nine-tenths of the boards used in America are of this species. *S.*

3. *Leaves many, in a fascicle.* LARIX.

pendula, A. (black larch, tamarack, hack-matack. O. M. ♄.) leaves deciduous: strobiles oblong: margins of the scales inflexed: bracts guitar-form, with a slender point.

microcarpa, Lb. (1) (red larch. O. M. ♄.) leaves deciduous: strobiles roundish, few-flowered: scales reflexed: bracts oval, obtuse, acuminate. These two last species were considered as varieties of the same; but Mr. Lambert proved their specific difference by raising them from the seed.

Exotic.

larix, (common larch. ♄.) leaves deciduous: strobiles ovate-oblong: margins of the scales reflexed, torn: bracts guitar-form.

Southern.

pungens, Lb. (table mountain pine. A. ♄.) leaves in pairs, short, acute: strobiles ovate-conic: prickles of the scales elongated, subulate, incurved; lower ones reflexed.

taeda, Lb. (loblolly pine, old field pine. E. M. ♄.) leaves in threes, elongated: sheaths elongated: strobiles oblong-conic, deflexed, shorter than the leaves: spines inflexed. Var. *heterophylla* E. (smooth bark loblolly pine) leaves in two's and threes: bark smooth.

palustris, Lb. (long leaved, yellow pitch or broom pine. E. M. ♄.) leaves in threes, very long: stipules pinnatifid, ramentaceous, persistent: strobiles sub-cylindric, muricate.

flexilis, T. & J. (W.) leaves in fives, short and rather rigid: sheaths short and laccrate: strobile erect: scales large unarmed. Branches very flexible.

Thuja.

2—3. PIPER. 2. 98.

[Generic description is here given, it having been omitted at page 15. It should follow Erianthus.] Spadix ament-like: calyx o: corol o: style very short: stigmas 3, manifest, or a mere puncture or spot, 1—2 only persistent: berry 1-seeded. Stamens 2, 4, 5 and 6. (Pepper.)

Southern.

leptostachyon, N. (florida pepper. E. ☼.) herbaceous small: leaves obovate, obtuse, sub-3-nerved, pubescent: spikes axillary, filiform, erect, much longer than the leaves. 6—12 i. Ligustrum.

3—2. PIPTATHERUM. 4. 10.

racemosum, S. (2) (clustered millet-grass. A. Au. 2ℓ.) panicle simple: flowers racemose, lance-ovate: corol black, hairy: awn twice as long as the valves. Stipa.

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(1) pendula, W. larcina, Du Roi. Larix americana, Mx. who considered the pendula and microcarpa as the same species. (2) nigrum, T. Milium, S. Oryzopsis melanocarpa, M.

5—8. PISTIA. 14. 73.

Southern.

spathulata, Mx. (E. w. Ju.) leaves abruptly narrowed into the petiole, dilated, round and obtuse towards the summit. Geranium.

16—10. PISUM. 32. 93.

Exotic.

sativum, (pea. p. w. J. ☼.) petioles terete: stipules round and crenate at the base: peduncles many-flowered. Var. *umbellatum*, (bouquet pea,) has the stipules 4-cleft, acute. Var. *quadratum*, (quadrate pea,) fruit ash-colour, 4-sided. Var. *humile*, (dwarf pea,) stem erect, not climbing: leafets roundish. Lathyrus.

5—2. PLANERA. 53. 99.

Southern.

aquatica, Wr. (1) (E. M. ♄.) leaves ovate, acute, serrate, equal at the base, slightly scabrous, short petioled. 25—30 f. Sanicula.

4—1. PLANTAGO. 54. 31.

major, (plantain. O. w. J. 2ℓ.) leaves ovate, sub-dentate, sub-glabrous: scape terete: spike oblong, imbricate. 6—24 i. *S.*

lanceolata, (rib-wort. E. J. 2ℓ.) leaves lanceolate, villose: spike short, cylindric: bracts ovate, acuminate: scape angled, with close-pressed hairs. 1—2 f. *S.*

virginica, (dwarf plantain. E. r-y. J. ☼.) whitish pubescence on all parts: leaves lance-ovate, sub-denticulate: flowers remotish: scape angled. The corol adheres to the germ so closely, that at first view it appears to be superior. 3—8 i. *S.*

cordata, Lk. (2) (O. w. J. 2ℓ.) leaves heart-ovate, broad, sub-dentate, glabrous: spike very long: flowers sub-imbricate, lower ones scattered: bracts ovate, obtuse. 12—18 i. *S.*

media, (w. J. 2ℓ.) leaves lance-ovate, pubescent: spike cylindric: scape terete. In one variety the leaves are hirsute, and the spikes branching.

maritima, (3) (L. Au. 2ℓ.) leaves linear, grooved, fleshy, hairy near the base: scape terete: spike cylindrical: bracts rather acute. 6—10 i. *S.*

pusilla, N. (4) (Au. ☼.) minutely pubescent: leaves linear-subulate, flat, entire, acute: scape terete, longer than the leaves: spike cylindrical, loose; lower flowers distant: bracts ovate, acute, as long as the calyx.

cucullata, Lk. (5) (E. Ju. 2ℓ.) leaves ovate, concave-cowled, 9-nerved, pubescent beneath: spike cylindric, imbricate: scape tall, terete.

Southern.

caroliniana, Wr. (E. Ju. ♂.) all over glabrous: leaves lanceolate, very entire, long: flowers remote: stem terete. Elliott unites this species with the next.

interrupta, Lk. (E. Ju. 2ℓ.) leaves lanceolate, (lance-ovate, Ph.) entire, somewhat pilose: spike slender, long, interrupted: flowers glabrous. Sometimes nearly glabrous. Elliott.

glabra, N. (W.) leaves ovate, denticulate, smooth: scape slender, sub-compressed, nearly equal to the leaves: flowers scattered: bracts ovate, acuminate.

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(1) ulmifolia, Mx. (2) kentuckienses, Mx. (3) pauciflora, Ph. (4) hybrida, lanceolata, M.? aristata, Mx. elongata, Ph. (5) maxima, Jn.

eriopoda, T. & J. (W. 2[.) stemless: petioles covered with very long wool at the base: leaves broad lanceolate, attenuate at each end, long-petioled, glabrous, entire, 5-nerved: scape terete, very glabrous: spike cylindric, exceeding the leaves: flowers remote: stamens and styles very long: bracts broad-ovate, obtusish: capsules 2-seeded. 9—12 i.

gnaphaloides, N. (1) (W. Ju. ☼.) silky-villose: leaves lance-linear, very entire, nakedish above: scape terete, scarcely longer than the leaves: spike cylindric, imbricate: bracts linear, with long, villose ciliae. Sanguisorba.

20—13. PLATANUS. 50. 99.

occidentalis, (button wood, american plane-tree, false sycamore. O. J. ♄.) leaves quinquangular, obsoletely lobed, toothed, pubescent beneath: stem and branches becoming white. Grows to a greater size than any other tree in America. Liquidambar.

9—2. PLEEA. 5. 13.

Southern.

tenuifolia, Mx. (E. y-r. 2[.) very glabrous: leaves very narrow-ensiform: sheaths of the spike 1-flowered. 1—2 f. Rheum.

3—2. PLEURAPHIS. 4. 10.

Southern.

jamesii, T. (W. Ju. 2[.) culm terete, smooth, slender: spike terminal, erect: spikelets sessile, in an ovate congeries at each joint of the rachis: involucre white-wooly, one third the length of the flowers. Discovered on the river Canadian, by Dr. Edwin James. 1 f. Holosteum.

3—2. POA. 4. 10.

Remarks. The word *poa* is pure Greek, and signifies pasture or fodder. Linneas applied the name to this genus, because it includes the most common *pasture grass*, and *meadow grass*. The poa pratensis, aided by the agrostis vulgaris, constitutes most of those beautiful carpets which cover our fields, lawns, and road-sides.

annua, (Ap. ☼.) panicle sub-secund, divaricate: spikelets ovate-oblong, 5-flowered: florets free: culm oblique, compressed: root fibrous. 6—8 i. *S.*

fasciculata, T. (L. Au. 2[.) panicle spreading; branches straight, fascicled, crowded: spikelets oblong, 3-flowered: florets free: calyx minute, unequal: culm oblique, terete: root fascicled. 1—2 f.

dentata, T. (E. 2[.) panicle loose, somewhat spreading; branches capillary, virgate: spikelets lanceolate, 5-flowered: florets free: calyx unequal: lower glume obtuse, 3-nerved: lower valve of the corol 5-nerved, 5-toothed at the apex when old. 3 f.

aquatica, Var. *americana*, T. (2) (E. Au. 2[.) panicle erect, half-whorled, diffuse; branches flexuous, smooth: spikelets linear, 6—8-flowered: florets ovate, obtuse, free: leaves broad-linear with the sheaths smooth. 4—5 f.

maritima, Huds. (E. J. 2[.) panicle branched, somewhat crowded: spikelets about 5-flowered, terete: florets rather obtuse, indistinctly 5-nerved: root creeping. 1 f.

brevifolia, M. (3) (A. Ap. 2[.) panicle loose; branches in pairs, horizontal: calyx 3—4-flowered: corol pubescent: leaves very short: stipule acuminate. 2 f.

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(1) lagopus, Ph. (2) aquatica, Ph. (3) alpina, Ph.

pungens, T. (1) (E. Ap. 2f.) culm compressed: leaves very short, cuspidate: panicle sub-simple, spreading: spikelets ovate, 3—4-flowered: florets webbed, obtusish, obscurely 5-nerved. 18 i. *S.*

pratensis, (O. J. 2f.) panicle diffuse: upper leaves much shorter than the smooth sheaths: florets acute, 5-nerved, webbed at the base: stipule short truncate: root creeping. 2—3 f. *S.*

trivialis, (2) (Ju. 2f.) panicle equal, diffuse: spikelets oblong-ovate, about 3-flowered: florets webbed at the base, 5-nerved: culm and sheath roughish: stipule oblong: root creeping. 2—3 f.

compressa, (blue grass. E. Ju. 2f.) panicle contracted, somewhat one-sided: spikelets oblong, 3—6-flowered: florets webbed: glumes sub-equal: culm oblique, compressed: root creeping. Var. *sylvestris*, T. panicle loose, spreading: spikelets 2—3-flowered: culm slender, nearly erect. 12—18 i. *S.*

serotina, Eh. (3) (J. 2f.) panicle elongated, diffuse, at length somewhat one-sided: spikelets lance-ovate, 2—3-flowered: florets a little webbed at the base, yellow at the tip, obscurely 5-nerved: root creeping. 2—3 f.

nemoralis, (E. 2f.) panicle attenuated, weak; branches flexuose: spikelets ovate, about 3-flowered: florets loose, slightly webbed, acute, obsoletely nerved: stipule almost wanting. 2 f.

nervata, (4) (E. J. 2f.) panicle equal, diffuse; branches weak and at length pendulous: spikelets 5-flowered: florets free, conspicuously 7-nerved, obtuse. 3—4 f.

elongata, T. (E. 2f.) panicle elongated, racemose; branches solitary, appressed: spikelets ovate, obtuse, tumid, 3-flowered: florets free: stipule almost wanting. 3 f.

obtusa, M. (E. Au. 2f.) panicle ovate, contracted: spikelets ovate, tumid, 5—7-flowered: florets free: glumes scarious: corol ovate, smooth, obtuse; lower valve indistinctly 7-nerved: leaves as long as the culm, and with the sheaths, smooth. 2—3 f.

canadensis, Mx. (5) (meadow rattlesnake grass. O. Ju. 2f.) panicle large, effuse; branches half-whorled, flexuous, at length pendulous: spikelets ovate, tumid, 6—8-flowered: florets free: lower valve acutish, 7-nerved: upper valve very obtuse: stamens 2. 3—4 f.

capillaris, (E. Au. ☼.) panicle very large, loose, spreading, capillary: spikelets 3-flowered, ovate, acute: florets free: culm branched at the base: leaves hairy. 12 i. *S.*

hirsuta, Mx. (E. Ju. 2f.) culm erect, compressed, simple: sheaths hairy: panicle very large, capillary: branches spreading, at length reflected, bearded in the axils: spikelets oblong, about 5-flowered: corol ciliate on the margin. Var. *spectabilis*, (6) spikelets linear, 10—15-flowered. 18 i. *S.*

pectinacea, Mx. (7) (E. Ju. ☼) culm caespitose, oblique: leaves hairy at the base: panicle capillary, expanding, pyramidal, hairy in the axils: spikelets linear, 5—9-flowered: florets free, acute: upper valve of the corol persistent. 8—12 i. *S.*

reptans, Mx. (O. Au. ☼.?) dioecious: culm branched, creeping: panicle fascicled: spikelets lance-linear, 12—20 flowered: florets acuminate. Var. *caespitosa*, T. culm very short, caespitose: spikelets much crowded, oblong. 8 i. *S.*

eragrostis, (8) (E. Ju. ☼.) panicle equal, spreading: lower branches hairy in the axils: spikelets lance-linear, 9—15-flowered: florets obtuse: root fibrous. 12—18 i. *S.*

Southern.

tenuis, E. (E. Au. 2f.?) panicle branching, spreading, capillary: spikes 3-flowered, glabrous, long-peduncled: leaves linear, very long. 12—18 i.

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(1) autumnalis, E. flexuosa, M. (2) stolonifera, M. (3) palustris, M. crocata, Mx. (4) Briza canadensis, N. (5) Briza, Mx. (6) refracta, M. spectabilis, Ph. (7) tenella, Ph. pilosa, M. (8) obtusa, N. Briza, M.

parviflora, Ph. (E. J. 2f.) panicle diffuse, capillary: spikelets small, about 3-flowered: flowers obtusish, striate, caducous: leaves distichous, flat. Probably a variety of the nervata, T. 12—18 i.

conferta, E. (E.) panicles terminal and axillary, erect, compressed, with clustered flowers: spikelets 8-flowered, glabrous. 2—3 f.

angustifolia, E. (E. M. 2f.) leaves linear, involute: panicle somewhat crowded: spikes lanceolate, acute, four-flowered: flowers villose at the base. 1—2 f.

nitida, E. (E. Ju. ☼. ?) stem erect, very glabrous: panicle large, diffuse, capillary, sub-verticillate: peduncles long: spikelets lanceolate, 8-flowered. 1 f.

rigida, E. (E. M. 2f.) panicle lanceolate, a little branched, one-sided; branches alternate, one-sided. 2—4 i.

sirgoides, N. (W.) panicle attenuated, erect; branches capillary, loose, half-whorled: leaves with very long sheaths, short and acute: spikelets oblong, obtuse, sub-sessile, 4—6-flowered: calyx unequal, shorter than the corol. 4—5 f. Sorghum.

Poa, Glyceria. Windsoria.

Podalyria, Baptisia.

12—1. Podophyllum. 27. 61.

peltatum, (wild mandrake, may-apple. O. w. M. 2f.) stem terminated with 2 peltate palmate leaves: flower single, inserted in the fork, formed by the petioles of the leaves. Sometimes the plant is 3-leaved, and sometimes the flower is inserted on the side of one of the petioles. 1—2 f. *S.*

Actaea.

19—2. Podostemum. 54. 6.

ceratophyllum, (thread-foot. E. Ju. 2f.) stem filiform, floating: leaves pinnate: flowers axillary. Attached to rocks and large stones in shallow waters.

Lemna.

18—5. Podostigma. 30. 47.

Southern.

pubescens, E. (1) (E. y-g. M. 2f.) stem erect: leaves linear: umbels terminal and axillary: petals erect, longer than the calyx: corpuscle pedicelled. 12—18 i.

viridis, Wr. (2) (E. g. & p. M. 2f.) Described under Asclepias viridis, p. 118.

Enslenia.

18—1. Pogonia. (3) 7. 21.

ophioglossoides, (snake mouth arethusa. O. r. Ju. 2f.) root fibrous: scape with 2 distant leaves, 1 or 2-flowered: leaves lance-oval: lip fringed. 8—12 i. *S.*

verticillata, (O. y-r. J. 2f.) leaves 5, in whorls, lance-oblong: stem generally 1-flowered: 3 outer petals long-linear, inner ones lanceolate: lip 3-lobed: middle division undulated. Var. *medeoloides*, (4) inner petals short obtuse: leaves more acuminate. 6—12 i. *S.*

Southern.

divaricata, (E. p. J. 2f.) root fibrous: scape 1-flowered, with two distant, lance-oblong leaves: outer petals long-linear, expanding: lip sub-3-lobed, crenulate. 18—24 i. Triphora.

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(1) Asclepias pedicellata, Wr. Stylandra pumila, N. (2) Asclepias, Wr. Anantherix, N. (3) Arethusa, L. (4) Arethusa, Ph.

Polanisia, CLEOME.

5—1. POLEMONIUM. 29. 44.

reptans, (greek valerian. b. M. 2[.) leaves pinnate, (leafets 5—13:) flowers terminal, nodding. Diapensia.

6—1. POLYANTHES. 10. 17.

Exotic.

tuberosa, (tuberose. 2[.) flowers alternate, in pairs: rootlets tuberous: scape scaly: leaves linear, long. Sweet scented. Hyacinthus.

3—3. POLYCARPON. 22. 82.

Southern.

tetraphyllum, (E. w. J. ☼.?) stem branching, glabrous, striate, knotted: leaves opposite and in fours, obovate, obtuse, entire, glabrous, narrowed at the base. 3—6 i. Cephalanthus.

Polycarpon, STIPULICIDA.

3—1. POLYCNEMUM. 12. 29.

Southern.

americanum, N. (W. 2[.) caespitose: leaves connate, crowded, subulate, 3-angled, rather pungent: flowers terminal, triandrous? Kyllingia.

16—6. POLYGALA. 33. 35.

incarnata, W. (milkwort. E. r. J. ☼.) stem somewhat simple, erect: leaves scattered, subulate: spikes oval-oblong: corol with a slender, elongated tube: flowers crested. *S.*

polygama, Wr. (1) (ground flower. O. r. J. 2[.) stem sub-simple, (often several from the same root,) erectish: leaves oblanceolate or linear, mucronate: terminal racemes with perfect flowers; radical ones apetalous, prostrate, (running under ground when in loose sandy soil:) bracts small, subulate, caducous: calycine wings roundish, longer than the capsule. 6—12 i.

paucifolia, W. (flowering wintergreen. O. r. M. 2[.) small, large-flowered: stem simple, erect, naked below: leaves ovate, acute, glabrous, near the top of the stem: flowers crested, terminal, about in threes. 3—4 i. *S.*

uniflora, Mx. (W. 2[.) small: stem simple, erect, nakedish below: leaves few, broad-ovate, narrowing into the petiole: flowers not crested, solitary, scattered, pedicelled, nodding. A variety of the last? *N.*

senega. W. (seneca snake-root, mountain flax. O. r. or w. J. 2[.) stem erect, simple, leafy: leaves alternate, lanceolate: spike terminal, filiform: flowers alternate, not crested. Var. *albida*, leaves lanceolate or oval: spike somewhat crowded: flowers white, sub-sessile. 8—14 i. *S.*

lutea, W. (yellow milkwort. E. y. Ju. ☼. or ♂.) stem simple or branching: radical and lower cauline leaves spatulate, the others lanceolate: spike head-cylindric, crowded, peduncled. Var. *elatior*, Ph. stem sub-virgate, taller. 4—16 i. *S.*

viridescens, W. (g-w. Au. ☼.) stem erect, very simple: leaves lance-linear, obtusish: flower heads terminal, sub-globose.

sanguinea, (E. r. Ju. ☼.) stem erect, corymb-branched at the top: leaves alternate, linear: flowers not crested, in a head-form spike: peduncles squarrose: calycine wings obovate about as long as the capsule. Damp. 8—16 i. *S.*

purpurea, N. (E. Ju. r. ☼.) stem fastigiate-branched: leaves alternate, oblong-linear: flowers beardless: spikes cylindric, obtuse, imbricated on a squarrose rachis: calycine wings cordate-ovate, twice as long as the capsule.

(1) rubella, W. vulgaris, W.?

verticillata, (dwarf snake-root. O. w. J. ☼.) stem erect, branching: leaves whorled and scattered: spike filiform, peduncled: flowers distinctly alternate, approximate, crested: calycine wings shorter than the fruit. 6—8 i. *S.*

ambigua, N. (E. p. ☼.) first leaves whorled, the others alternate: stem with wand-like branches: spikes acute, long peduncled: flowers crested: calycine wings round and veined, equal and close pressed to the fruit: bracts caducous.

fastigiata, N. (☼.) stem slender, fastigiate-branched: leaves alternate, linear, acute: spike sub-capitate, peduncled: flowers somewhat crested: calycine wings spreading, ovate, acute, scarcely longer than the capsule.

crucista, (E. r. g. Ju. ☼.) stem erect, ramose, wing-angled: leaves in fours, lance-linear: flowers in spiked sessile heads. 8—12 i. *S.*

brevifolia, N. (E. r. Ju. ☼.) stem erect, fastigiate-branched, angular-winged: leaves oblong-linear, short, resinous-punctate, in fours, whorled: spikes sub-capitate, peduncled: flowers somewhat crested: calycine wings cordate-ovate, acute, scarcely longer than the capsule. *S.*

ramosa, E. (1) (E. g-y. Ju. 2ſ.) stem erect, branching from the base: lower leaves spatulate-obovate; cauline ones linear, equal: flowers sub-capitate-corymbed. 8—12 i. *S.*

corymbosa, Mx. (2) (g-y. Ju. 2ſ.) stem erect, terete, nearly naked: lower leaves lanceolate-linear; cauline ones subulate, minute near the summit: racemes corymbed: rachis squarrose. 2—4 f. *S.*

Southern.

setacea, Mx. (E. Ju. ☼.) stem simple, setaceous, nearly leafless, sparingly branched near the summit: leaves small, setaceous, scattered: flowers minute in a compact spike.

pubescens, M. (3) (E. r. y. Ju. 2ſ.) pubescent: stem erect, branching: leaves lance-oblong, acute, sub-sessile: racemes loose, terminal: flowers peduncled, at last pendulous.

viridescens, W. (4) (E. y-g. Ju.) stem simple: leaves wedge-obovate, obtuse: heads cylindric, squarrose: calycine wings distinctly acuminate. 1—4 i.

balduina, N. (E. y-w. Ju.) stem erect, branching near the summit: lower leaves spatulate-obtuse; cauline ones lanceolate: heads squarrose, corymbed: calycine wings setaceous-acuminate. 2—3 f.

alba, N. (W. w. 2ſ.) stem simple: leaves alternate, linear, revolute at the margin: spike racemed, long-peduncled: corol bearded: bracts caducous: calycine wings roundish. 6 i. Fumaria.

Polygonatum, CONVALLARIA.

8—3. POLYGONUM. 12. 28.

1. *Flowers axillary.*

aviculare, (knot-grass. O. w. M. 2ſ.) stamens 8, styles 3: leaves lanceolate, scabrous at the margin: stipules short, lacerate: stem procumbent: flowers sub-sessile, axillary, minute. 6—12 i. *S.*

erectum, (5) (O. w. J. 2ſ.) stem erect, branched: leaves oval, acutish: stamens mostly five. 1—3 f. *S.*

maritimum, W. (6) (L. w-r. Au. ♄. ?) stamens 8: styles 3: leaves lanceolate, thick and glaucous, revolute on the margin: stipules lacerate: stem diffuse, prostrate, suffruticose. 1—2 f. *S.*

tenue, Mx. (7) (slender knot-grass. O. w. Ju. ☼.) leaves long-linear, straight,

(1) corymbosa, N. (2) attenuata, N. cymosa, Wr. (3) senega, var. rosea, Mx. (4) lutea, var. nana, Mx. (5) aviculare, var. latifolium, Ph. (6) marinum, Ph. glaucum, N. (7) linifolium, M. barbatum, Wr.

acuminate: stipules tubular, apex villose: stem slender, erect, branched, acute-angled: flowers alternate, sub-solitary. 9—18 i. *S.*

2. *Flowers in slender spikes.*

lapathifolium, (1) (E. r-w. Au. ☼.) stamens 6: styles 2: stipules awnless: peduncles scabrous: seeds concave on all sides: spikes rather crowded: leaves lance-ovate, short-petioled, pubescent above. 2—4 f. *S.*

punctatum, E. (2) (water pepper, biting knotweed. O. w. Au. ☼.) stamens 8: styles 3: leaves lanceolate, glabrous: stipules lax, glabrous, ciliate at the apex, spotted: spike filiform, weak, somewhat nodding: bracts remotely alternate. 1—2 f. *S.*

mite, P. (3) (tasteless knotweed. E. J. ☼.) stamens 8: styles 3: leaves narrow, lanceolate, sub-hirsute: stipules hirsute, long-ciliate: spikes linear: bracts ciliate, sub-imbricate. 12—18 i. *S.*

virginianum, (E. w. Ju. 2[.) stamens 5: styles 2, unequal: leaves broad-oval: spikes wand-like: flowers remote. 2—4 f. *S.*

3. *Flowers in thick crowded spikes.*

viviparum, (A. r. Au. 2[.) stem simple: leaves lance-linear, glabrous; margin revolute: spike single, linear: bracts ovate, acuminate. 6 i. *S.*

barbatum, W. (E. r-w. Ju.) stamens 6: styles 3: spikes wand-like, truncate, bristle-ciliate: leaves oblong, acute, smoothish. 18—24 i.

persicaria, (ladies' thumb, heart-spot knotweed. O. r. Ju. ☼.) stamens 6: styles 2: spikes ovate-oblong, erect: peduncles smooth: leaves lanceolate: stipules smoothish, ciliate. 1—2 f.

pennsylvanicum, (knee knotweed. O. Ju. ☼.) stamens 8: styles 2 or 1: spikes oblong: peduncles hispid: leaves lanceolate: stipules glabrous, not ciliate: stem with swelling knee-joints. 2—4 f. *S.*

amphibium, L. (4) (mud knotweed. O. r. Au. 2[.) stamens 5: styles 2, half-united: upper leaves sub-sessile and tapering to the base; middle ones short-petioled and abrupt at the base, lance-oblong and ovate-oblong, gradually tapering to a long-acuminate apex, rough at the edge: spike cylindrical: stem thick, erect, sub-decumbent at the base. Flowers large, red, in a thick spike 2 to 3 inches long. In mud and moist ground.

coccineum, W. (5) (creeping knotweed. r. Au. 2[.) stamens 5: styles 2, half-united: leaves long-petioled, oblong, abrupt and sub-cordate at the base, acute at the apex, glabrous and lucid: spike cylindrical: stem thick and strong, decumbent and rooting. Flowers red, in spikes not so long or thick as the last. Stem creeps along the muddy banks of an island in the Hudson, above Troy, from 6 to 12 feet.

fluitans, Ea. (6) (swimming knotweed. r. Au. 2[.) stamens 5: styles 2, half-united: leaves long-petioled, oblong-oval, tapering to the base, obtuse and acute at the apex, glabrous and lucid: stem filiform, wiry, floating, sometimes rooting: spike cylindric. Flowers red, in spikes less than half as long as the last, and not a fourth as large as the preceding. Stem 10 to 15 feet long, often dark-brown and sending off rootlets in clear water. Grows in Whiting's Pond, Columbia county, and in Botany Pond, three miles east of Albany. I have watched this and the two preceding species several years, and am satisfied, that they are distinct. Finding this to be a new one, not var. *natans* of Mx. I give it a new name.

4. *Flowers in spiked-panicled racemes.*

articulatum, (joint-weed. E. r. w. Ju. ☼.) stamens 8: styles 3: racemed spikes

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(1) incarnatum, E. (2) hydropiper, Mx. hydropiperoides, Ph. (3) hydropiperoides, Mx. (4) Var. terrestre, T. (5) amphibium, Var. natans, Mx. (6) amphibium, Var. natans, 3d. ed. Manual, and Var. aquaticum, T.

in a panicle, filiform : peduncles filiform, solitary, proceeding from above the imbricate truncate bracts : leaves linear : stipules sheathing, truncate. 9—15 i. *S.*

5. Flowers sub-racemed ; leaves cordate-sagittate or hastate.

sagittatum, (prickly knotweed. O. w. J. ☼.) stamens 8 : styles 3 or 1 : flowers in heads : leaves sagittate : stem with prickles reversed, or curved towards its base, climbing. *S.*

arifolium, (halbert knotweed. O. r-w. Ju. ☼.) stamens 6 : styles 2 or 1 : flowers distinct : spikes few-flowered : leaves hastate : stem with prickles reversed, sub-erect. 2—4 f. *S.*

convolvulus, (bind knotweed. O. w. r. Ju. ☼.) stamens 8 : styles 3 : leaves oblong, heart-hastate : stem twining, angled, roughish : divisions of the calyx obtusely keeled. *S.*

scandens, (climbing buck-wheat. O. w. r. Au. 2ſ.) stamens 8 : styles 3 : leaves broad-cordate : stipules truncate, naked : stem twining, glabrous : calyx bearing the fruit 3-winged. *S.*

cilinode, Mx. (E. Ju. ☼.) stamens 8 : styles 3 : leaves cordate : stipules subacute, surrounded at the base with an outer ciliate series : stem angled, prostrate or climbing, roughish : divisions of the calyx obtusely keeled.

Exotic.

fagopyrum, (buck-wheat. r-w. Ju. ☼.) stamens 8 : styles 3 : racemes paniced : leaves heart-sagittate : stem erectish, unarmed : angles of the seeds equal. 1—2 f.

orientale, (prince's feather. r. Au. ☼.) stamens 7 : styles 2 : leaves ovate : stem erect, tall : stipules rough-haired, somewhat salver-form. Naturalized. 3—6 f.

Southern.

hirsutum, Wr. (E. w. Ju. ☼.) stamens 8 : styles 3-cleft : spikes filiform : stem and stipules very hirsute : leaves lanceolate, hirsute punctate. 2 f.

bistortoides, Ph. (W. w-r. J. 2ſ.) stem simple, 1-spiked : leaves oval, flat, petioled : bracts 1-flowered, 2—3-valved.

polygamum, Vent. (1) (E. w. Au. 2ſ. ?) stamens 8 : styles 3 : spikes paniced : flowers solitary : divisions of the calyx obovate : leaves spatulate : stipules entire, obliquely truncate. A variety of the articulatum ? Ph. 6—8 i.

fimbriatum, E. (E. w. Au. 2ſ. ?) spikes paniced : flowers solitary, fimbriate : stipules truncate, fringed : leaves linear, acute at each end. 2 f.

setaceum, Bald. (E. w. Ju.) stamens 8 : styles 3-cleft : peduncles long, 2-spiked : spikes interrupted, hirsute : leaves broad-lanceolate, acuminate, hirsute : stipules hirsute, ciliate : stem erect, glabrous. 1—2 f.

gracile, N. (E. g-w. ☼.) dioecious, glaucous : racemes slender, filiform : flowers deflected, longer than the peduncles : peduncle articulated to the calyx : leaves spatulate-linear, obtuse : fruit longer than the calyx. 1—4 f.

Brunichia.

17—4. Polymnia. 49. 55.

canadensis, (white leaf-cup. O. w. or y. J. 2ſ.) viscid-villose : leaves denticulate, acuminate ; lower ones pinnatifid, upper ones 3-lobed or entire. 2—3 f. *S.*

uvedalia, (2) (yellow leaf-cup. A. y. Ju. 2ſ.) leaves opposite, 3-lobed, acute, decurrent into the petiole : lobes sinuate-angled : rays elongated. 3—5 f. *S.*

Iva.

21—1. Polypodium. 55. 5.

vulgare, (polypod. O. Ju. 2ſ.) frond deeply pinnatifid : divisions lance-linear,

(1) parvifolia, Mx. (2) maculata, Cavanilles.

obtuse, crenulate, approximate, upper ones gradually smaller: fruit dots solitary: root chaffy. Var. *virginianum*, has a naked root. 8—12 i. *S.*

hexagonopterum, W. (E. Ju. 2f.) frond doubly-pinnatifid, smoothish; two lower divisions deflexed; subdivisions lanceolate, obtuse, ciliate, those of the under leafets gash crenate, and of the upper ones entire; the lowest ones adnate-decurrent: fruit-dots minute, solitary. The whole frond together presents a triangular form. 12 i. *S.*

connectile, Mx. (E. Ju. 2f.) frond doubly-pinnatifid, ciliate; divisions opposite, contiguous, adnate: subdivisions somewhat oval: stipe chaffy: fruit-dots minute. 12 i.

dryopteris, (1) (W. Ju. 2f.) frond ternate, doubly pinnate, straight, subrigid; divisions obtusish, sub-entire: fruit-dots marginal, confluent. 8—12 i.

Southern.

virginianum, W. (E. Ju. 2f.) fronds deeply pinnatifid; divisions lanceolate, obtuse, very entire, approximate; upper ones gradually smaller: fruit dots solitary: root solitary.

incanum, W. (2) (O. Ju. 2f.) fronds deeply pinnatifid; divisions alternate, linear, very entire, obtuse; upper ones gradually smaller, scaly beneath: stipe scaly, fruit-bearing at the apex: fruit dots solitary.

Acrostichum.

3—2. POLYPOGON. 4. 10.

racemosus, Mx. (3) (E. Au. 2f.) panicle dense, conglomerate, interrupted bristles of the calyx scabrous: corol unarmed, hairy at the base: culm branched. Trichochloa.

4—1. POLYPREMUM. 40. 40.

Southern.

procumbens, (O. w. Ju. ☼.) stem furrowed, with the margins of the furrows sharp-serrulate, dichotomous above: leaves opposite, linear, sessile, finely serrulate, sub-decurrent. 6—12 i. Allionia.

17—1. POLYPTERIS. 49. 55.

Southern.

integrifolia, N. (E. 2f.) stem erect, sub-scabrous, branching above: leaves alternate, entire, lance-linear, scabrous. 3—4 f. Melananthera.

21—2. POLYTRICHUM. 56. 4.

1. *Capsules with apophysis.*

juniperinum, (hair-cap moss. O. M. 2f.) stem generally simple: leaves lance-linear, entire, flattish, somewhat spreading: the apophysis depressed. In dry woods, &c.

piliferum, stem simple: leaves lanceolate, entire, bearing hairs at the apex: apophysis depressed. In dry sunny places.

perigonale, simple, largish: leaves serrate; those of the pericheth differing, elongated, membranaceous, ending in a capillary form: capsule 4-sided; lid orbicular, with a short apex in the centre. Apophysis under the capsule.

2. *Capsules without apophysis.*

capillare, stem short, simple: leaves few, laxish, linear, aculeate-serrate: peduncles longish, capillary: capsule erect, sub-ovate; lid convex, abruptly-mucronate, slender, longish.

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(1) calcareum, W. Neprodium, Mx. (2) ceteraccinum, Mx. Acrostichum polypodoides, L. (3) glomeratus, W. Agrostis, Mx.

trachyphyllum, stemless: leaves conglobate at the root, very short, oblong-oval, apex obtuse and thickish: capsules sub-corneous, obovate, sub-oblong; lid with a short apex.

brevicaule, stemless: leaves very few, lower ones close-pressed, dilated into an oblong form; upper ones mucronate-subulate, obscurely denticulate: capsule erect, oblong-cylindric; lid convex, long mucronate, inclined.

Catharinea.

10—1. POMARIA. 32. 93.

Southern.

glandulosa, Cavan. (W. y. ♄.) branching, glandular punctate: branches slender, sub-pubescent: leaves abruptly bipinnate; leafets ovate, oblique at the base, entire, sessile, sub-pilose, smooth and pale-green above.

Pyrola.

6—1. PONTEDERIA. 6. 17.

cordata, (pickerel weed. O. b. Ju. 2f.) leaves heart-oblong, obtuse: spike many-flowered, compact: divisions of the corol oblong. Var. *angustifolia*, Ph. (1) leaves elongated-triangular, truncate and sub-cordate at the base. 1—2 f. *S.*

Southern.

lancifolia, M. (E. b. J. 2f.) leaves lance-oblong: flowers spiked. Probably a variety of the last. Elliott. Galanthus.

20—8. POPULUS. 50. 99.

tremuloides, Mx. (2) (white poplar, American aspen. E. Ap. ♄.) leaves heart-roundish, abruptly acuminate; tooth-serrulate, glabrous, a little pubescent at the margin, with two glands at the base on the upper side: petioles compressed, in the young state silky. 20—30 f.

grandidentata, Mx. (tree poplar. E. Ap. ♄.) leaves round-ovate, acute, unequally and coarsely sinuate-toothed, glabrous; in the young state villose: petioles compressed. Var. *pendula*, branches pendulous. 40—50 f. *S.*

betulifolia, Ph. (3) (birch-leaf poplar. E. Ap. ♄.) leaves rhomboidal, long-acuminate, dentate, glabrous: young branches pilose. 30—40 f.

angulata, (4) (balm-of-gilead, water poplar, cotton wood. O. Ap. ♄.) leaves ovate-deltoid, acuminate, obtusely hook-toothed, glabrous; younger ones broad-cordate: branches wing-angled. 80 f.

balsamifera, W. (balsam poplar. Ap. ♄.) leaves ovate acuminate, with close-pressed serratures, white and net-veined beneath: buds resinous. 70—80 f.

candicans, A. (5) (E. Ap. ♄.) leaves cordate, ovate, acuminate, obtusely and unequally serrate, whitish beneath, sub-3-nerved, net-veined; petioles hirsute: buds resinous: branches terete. 40—50 f.

laevigata, W. (6) (cotton tree. Ap. ♄.) leaves round ovate, deltoid, acuminate, sub-cordate, unequally serrate, glabrous, glandular at the base; petioles compressed: younger branches angled. 70—80 f. *S.*

heterophylla, Mx. (various-leaved poplar. E. M. ♄.) leaves round-ovate, cordate, with a small sinus, sub auricled, obtuse, hook-toothed; younger ones downy. 70—80 f. *S.*

Exotic.

dilatata, W. (lombardy poplar, italian poplar. Ap. ♄.) leaves glabrous both sides, acuminate, serrate, deltoid, the breadth equal to or exceeding the length: branches erect, close to the stem. It is said no pistillate plant of this species has been brought to America. Consequently no seeds are obtained from it, and it has not been re-produced here from seed. 40—80 f.

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(1) Species of Ph. mucronata, Rs. (2) trepida, W. (3) hudsonica, Mx. younger. nigra, Mx. elder. (4) heterophylla, Du Roi. (5) latifolia, Mu. (6) canadensis, Mx.

graeca, W. (athenian poplar. Ap. ♄.) leaves cordate-ovate, acuminate, obsoletely serrate: petioles compressed. 20—40 f.

Southern.

monilifera, W. (W. Ap. ♄.) leaves sub-cordate-deltoid, glabrous, glandular at the base, with cartillaginous, sub-pilose, hooked serratures; nerves spreading: petioles compressed above; older branches terete. 60—70 f.

Diospyros.

12—13. PORCELIA. (1) 52. 76.

triloba, W. (custard apple. W. p. Ap. ♄.) leaves smoothish, oblong-wedge-obovate: outer petals orbicular: fruit large, fleshy. 30—40 f. *S.*

Southern.

parviflora, Mx. (E. g-p. M. ♄.) leaves wedge-obovate, mucronate, under surface and branches rufous pubescent: outer petals scarcely twice as long as the calyx. 2 f.

pygmaea, Mx. (E. Ap. ♄.) leaves long-linear, wedge-form, obtuse, coriaceous, with the branches glabrous: outer petals obovate-oblong, much larger than the calyx. 6—18 i.

grandiflora, Mx. (E. y-w. Ap. ♄.) leaves wedge-obovate, obtuse, under surface and branches rufous-pubescent: outer petals obovate, much larger than the calyx. 18—24 i.

Hepatica.

21—5. PORINA. 57. 2.

pertusa, crust smooth, equal, becoming white-cinereous: warts of the receptacles sub-globose: mouths many, depressed, black. On the bark of trunks of trees. Very common.

lejoplaca, crust smooth, milk-white: warts of the receptacles convex; mouth sub-solitary, becoming fuscous, opening into irregular chinks. On bark of trunks of trees.

fallax, crust sub-effuse, glabrous, plicate-rugose, olive-cinereous: warts of the receptacle crowded, irregular, depressed above, sub-margined with a sub-gibbose, flexuous tumid periphery; mouths solitary and numerous, sub-confluent, deformed, black. On bark of trees.

papillata, crust smooth, broken-rimose, becoming white: warts of the receptacle convex: mouth elevated, solitary, papilla-like, pore reddish-yellow, pertuse. On bark of trees.

globularis, crust thin, granulated, becoming white-cinereous; granulations crowded, white, sub-globose and branching: warts of the receptacles thinly scattered, globose, glabrous; mouth solitary, impressed, punctate, black.

leucostoma, Ach. receptacle with white orifices: crust dark. Resembles a Variolaria. Halsey.

Pyrenula.

12—1. PORTULACCA. 54. 86.

oleracea, (purslane. O. y. J. ☉.) leaves wedge-form: flowers sessile. *S.*

Southern.

pilosa, (W. ☉.) leaves subulate, alternate: axils pilose, flowers sessile, terminal.

Talinum.

4—4. POTAMOGETON. 15. 13.

natans, (pond-weed. O. g. J. 2ℓ.) leaves long-petioled, floating, lance-oval; at first some of them are sub-cordate. On water. *S.*

fluitans, (E. g. Ju. 2ℓ.) lower leaves long, linear; upper ones lanceolate, nerved, coriaceous; all petioled. In water. *S.*

heterophyllum, Sr. (2) (E. g. Ju. 2ℓ.) upper leaves petioled, oval, tapering to both ends: lower ones crowded, sessile, linear. *S.*

diversifolium, B. (3) (O. g. Ju. 2ℓ.) floating leaves opposite, lanceolate, 5

(1) Orchidocarpum, Mx. Anona, W. Asimina, Ad. (2) hybridum, Mx. (3) setaceum, Ph.

nerved, short-petioled; submersed ones sessile, alternate, filiform: spikes dense, axillary, alternate, shorter than the leaves. Water. *S.*

perfoliatum, (O. g. Ju. 2f.) leaves heart-ovate, clasping, all immersed: spikes terminal, above water: flowers alternate. In water.

lucens, Mx. (O. g. J. 2f.) leaves very large, lanceolate, sub-sessile, middle rib thick: spikes long, cylindric. The substance of the leaf is composed of translucent sellules; so that to the naked eye it appears to be a thin pellucid membrane. Spike from 1 to 2 inches long, with a peduncle thrice as long. The stipule above each leaf is about an inch in length; its substance resembling the leaf. Water. *S.*

crispum, (O. r-g. J. 2f.) leaves alternate, or opposite, lance-oval, undulate, serrate: spikes few-flowered. *S.*

pectinatum, S. (1) (E. g. J. 2f.) leaves long-bristle-form, approximate, two-ranked, sheathed at the base: spikes terminal, interrupted, whorled: fruit ovate, turgid. All immersed in water but the spike.

gramineum, Mx. (2) (grass pond-weed. O. g. Ju. 2f.) leaves lance-linear, alternate, sessile: stipules broad: stem terete, sub-dicotomous. In July, some of these plants begin to raise their spikes of unopened flower-buds to the surface of the water. As soon as the stigmas are fertilized by the pollen, the spikes are again withdrawn to ripen the fruit under water. Other individuals succeed them, and the process goes on for several weeks. *S.*

compressum, (E. g. Ju. ☼. or 2f.) leaves linear, obtuse: stem compressed: spike short, 4 to 6-flowered. Water. Ruppia.

11—13. POTENTILLA. 35. 92.

1. *Leaves ternate.*

tridentata, A. (mountain cinquefoil. A. w. Ju. 2f.) ascending, smoothish: stipules subulate: leaves wedge-oblong, 3-toothed at the end, a few close-pressed hairs: flowers in a terminal forked corymb: petals oblong-ovate, longer than the calyx. 5—10 i. *S.*

emarginata, Ph. (E. 2f.) assurgent, hirsute: stipules ovate, entire: leaves ternate: leafets sessile, approximate, gash-toothed, hirsute on both sides: pedicels few, terminal, elongated, 1-flowered: petals wedge-oblong, emarginate, twice the length of the calyx. Labrador.

nivea, W. (E. y. Ju. 2f.) assurgent, woolly-tomentose: stipules ovate, entire: leafets sessile, approximate, gash-toothed, hirsute above, white tomentose below: peduncles few, terminal, 1-flowered: petals broad-obcordate, scarcely longer than the calyx. Labrador.

villosa, Ph. (W. 2f.) assurgent, silky villose: stipules broad, membranaceous, entire: leafets sessile, approximate, with shining close-pressed hairs above, hoary tomentose beneath: peduncles short, aggregate: petals obcordate, longer than the calyx.

hirsuta, Mx. (W. w. Ju. 2f.) erect, simple, very hirsute: stipules lanceolate, entire: leaves obovate, gash-laciniate: panicle few-flowered; pedicels short: petals smaller than the calyx.

norwegica, (cinquefoil. O. y. J. ☼.) erect, branching, hairy: stipules oval, toothed: leafets lance-rhombic, gash-toothed: branches dichotomous: pedicels short, axillary, solitary: petals shorter than the calyx. 8—18 i. *S.*

2. *Leaves digitate in fives, rarely in sevens.*

canadensis, (3) (common five-finger. O. y. M. 2f.) procumbent, sub-ramose, whitish-silky: stipules ovate, gashed: leaves wedge-obovate, gash-toothed: stem ascending and creeping, hirsute: peduncles solitary, elongated: divisions of the calyx lance-linear: petals orbicular, sub-entire, of the length of the calyx. This plant is so long in flower, and assumes so many forms and sizes, that students in botany often make several species of it. Persoon's diagnosis of *reptans* can be found in this plant; but we have no such species. 2—18 i. *S.*

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(1) marinum, Mx. (2) pauciflorum, Ph. (3) pumila, Lk.

simplex, Mx. (O. y. M. 2f.) erect, simple, hirsute: stipules gashed: leaves oblong-oval, coarsely toothed, upper ones sessile: peduncles axillary, solitary, elongated, 1-flowered: divisions of the calyx lance-linear: petals round-obcordate, longer than the calyx.

sarmentosa, M. (E. y. M. 2f.) stem sarmentose: leaves quinate; leafets obovate, obtuse, serrate, glabrous above, hirsute beneath: petals roundish, longer than the calyx.

opaca, W. (E. y. Ju. 2f.) decumbent, filiform, hirsute: stipules linear-oblong, entire: radical leaves in 7's and 5's, wedge-linear, dentate: peduncles axillary, solitary, 1-flowered: petals retuse, as long as the calyx. Labrador.

dissecta, Ph. (E. 2f.) erect, branching, nearly glabrous: leaves quinate; leafets pinnatifid: divisions entire, acute: flowers terminal, sub-corymbed. Hudson's Bay.

argentea, (silver five-finger. O. w-y. Ju. 2f.) stem prostrate and ascending, rarely sub-erect, branching, white-downy: stipules ovate-acute: leaves wedge-form, gash-toothed, silvery white down beneath: petals retuse, scarcely longer than the calyx. 4—10 i. *S.*

recta, P. (y. J. 2f.) stem erect: leaves in fives and sevens; leafets lanceolate, coarsely toothed: petals ob-cordate, larger than the calyx: corol large, pale.

3. *Leaves more or less pinnate.*

fruticosa, (1) (shrubby cinquefoil. E. y. J. ♄) fruticose, hirsute: stipules ovate, entire: leaves quinate-pinnate; leafets linear-oblong, entire: petals longer than the calyx. 1—5 f. *S.*

anserina, (tansey cinquefoil. O. y. J. 2f.) creeping: leaves interruptedly pinnate, numerous, gash-serrate, silky, white-downy beneath: peduncles solitary, 1-flowered. Var. *grandiflora*, nearly glabrous, very small: leaves much smaller, in few pairs; leafets obovate, reddish-green, whitish beneath.

pensylvanica, (y. Ju. 2f.) erect, very soft, and somewhat whitish-villose: leaves pinnate; leafets oblong, obtuse, sub-pinnatifid, woolly: panicle straight, many-flowered: divisions of the calyx semi-oval. It is doubtful whether this is an American species. Torrey.

supina, (W. y. J. ☼.) procumbent, dichotomous: leaves pinnate; leafets oblong, deeply toothed: peduncles lateral, solitary, 1-flowered, spreading. *S.*

Southern.

humifusa, N. (W. y. M.) leaves digitate, quinate; leafets wedge-oblong, obtuse, gash-toothed, white tomentose beneath: peduncles short, filiform, procumbent. 4—5 i.

leucophylla, T. & J. (W.) erect: leaves pinnately divided; lobes oblong, deeply and sharply serrate, whitish-silky on both sides: stipules lanceolate, acute, very entire or 1-toothed: flowers lax-corymbed: divisions of the calyx lanceolate, very entire, narrower than the bracts: receptacle pilose: pericarps smooth. 15 i. Comarum.

Potentilla. Bootia. Comarum.

19—13. Poterium. 54. 92.

Exotic.

sanguisorba, (burnet. J. 2f.) stem somewhat angled, unarmed: leaves pinnate: leafets serrate: flowers in heads.

Pothos, Ictodes.

17—1. Prenanthes. 49. 53.

alba, (white lettuce. O. w. p. Au. 2f.) radical leaves angled, hastate, tooth-

(1) floribunda, Ph.

ed, somewhat lobed: cauline ones round-ovate, toothed, petioled; uppermost ones lanceolate: panicle lax; the terminal fascicle nodding: calyx 8-cleft, 9 or 10-flowered. Var. *nana*, Bw. low: leaves 3-parted, hastate, ovate and lanceolate, sometimes all simple: racemes panicled or simple. 1—3 f. *S.*

serpentaria, Ph. (E. p. Au. 2f.) leaves toothed, rough; radical ones palmate, minute; cauline ones long-petioled, sinuate pinnatifid, sub-3-lobed; middle lobe 3-parted; upper leaves lanceolate: racemes terminal, panicled, short, nodding: calyx 8-cleft, 12-flowered. Probably a variety of the alba. 2—4 f. *S.*

altissima, (E. p-y Au. 2f.) stem branching: leaves petioled, 3-lobed, angled, denticulate; margin scabrous: racemes axillary: flowers nodding: calyx about 5-flowered. 4—8 f. *S.*

cordata, W. (E. w-y. Au. 2f.) stem panicled above: leaves petioled, cordate, toothed, ciliate; floral ones sessile, oblong, entire: panicle lax, raceme-flowered. 4—6 f. *S.*

virgata, Mx. (1) (O. w-p. Au. 2f.) glabrous: stem very simple: leaves all lyrate-sinuate: branchlets somewhat 1-sided: flowers pendant: calyx glabrous, 8-cleft, 10-flowered. 3—6 f. *S.*

crepidinea, Mx. (E. S.) leaves broad-lanceolate, attenuated at the base, unequally tooth-angled: panicle fascicled, terminal, few-flowered, nodding: calyx hirsute, 10—12-cleft, about 20-flowered. 4—6 f. *S.*

rubicunda, W. (S. 2f.) leaves ciliate, radical ones hastate-angled, sub-entire; lower cauline ones obovate, tapering at the base, sub-angled; upper ones lanceolate, entire: racemes simple, flowers nodding. This was considered a variety of the *alba* by Linnæus, and is made synonymous with the *virgata* by Mr. Nuttall. 18 i.

racemosa, Mx. (E.) stem simple: leaves all undivided, smooth; radical ones lance-oval; cauline ones half-clasping: racemes oblong, very hirsute; fascicles nodding: calyx 8—9-parted, 9—12-flowered.

deltoidea, E. (E. p. S.) stem simple, glabrous: leaves deltoid, acuminate, acutely-denticulate, sub-glaucous beneath: racemes axillary, few-flowered: calyx 5-flowered. 2 f. *S.*

Southern.

simplex, Ph. (E. p. Ju.) stem simple: upper leaves lance-linear, entire: radical ones lanceolate, sinuate: raceme terminal, simple: flowers nodding: calyx 8-flowered. Is this distinct from the virgata? Elliott. 2 f.

illinoensis, P. (W.) stem simple, and with the leaves, very rough: leaves all undivided, lance-oval: raceme long; fascicles sub-sessile, erect, hirsute.

aphylla, N. (E. p. r. 2f.) stem sub-simple; branches virgate: radical leaves linear; cauline ones small, subulate, scattered: flowers solitary: calyx 8-cleft, many-flowered. 2 f. Is this distinct from the next?

juncea, Ph. (W. 2f.) stem virgate-branched, sulcate, glabrous: cauline leaves remote, subulate, very short: branchlets 1-flowered: calyx 5-cleft, 5-flowered; leafets membranaceous on the margin.

pauciflora, T. & J. (W.) stem branching, flexuous, panicled above: branchlets 1-flowered: flowers erect: leaves lance-linear, runcinate, glabrous: calyx about 5-flowered.

tenuifolia, T. & J. (W.) stem branching, glabrous: leaves linear, very entire: panicle lax, terminal: flowers erect: calyx about 5-flowered. This and the preceding species were collected near the Rocky Mountains by Dr. James. They will probably hereafter be referred to a new genus. T.

Lactuca.

5—1. PRIMULA. 21. 34.

farinosa, var. *americana*. (bird's-eye primrose. W. r. 2f.) leaves obovate-spatu-

(1) autumnalis, Wr. rubicunda, W. ?

late, repandly crenate-dentate, mealy beneath : umbel erect, many-flowered ; peduncles spreading : limb of the corol flat, as long as the tube ; divisions obtuse, obcordate. 6—10 i.

mistasinica, Mx. (W. 2f.) small, glabrous : leaves oval-spatulate, sub-dentate : scape elongated : umbel few-flowered : limb of the corol reflexed ; the divisions wedge-oblong, obtusely 2-cleft : capsule oblong, exsert.

Exotic.

acaulis, (primrose. 2f.) leaves rugose, toothed, hirsute beneath : scape 1-flowered.

veris, (cowslip primrose. r-y. 2f.) leaves rugose, toothed : limb of the corol concave ; neck of the tube oblong : calyx inflated.

elatior, (oxlip primrose. w-y. 2f.) leaves rugose, toothed, hirsute : limb of the corol flat ; neck of the tube hemispheric : flowers naked within.

auricula, (auricula primrose. 2f.) leaves serrate, fleshy, obovate : scape many-flowered : calyx mealy.

Southern.

angustifolia, T. & J. (W. p.) leaves lance-oval, very entire, glabrous : scape 1-flowered : divisions of the corol ovate, very entire. 1—2 i.

Dodecantheon.

6—1. PRINOS. 43. 95.

verticillatus, L. (1) (winter berry, false alder. O. w. J. ♄.) leaves deciduous, oval, serrate, acuminate, pubescent beneath : fascicles of staminate flowers axillary, umbelliferous ; the pistiliate flowers are aggregated ; both 6-parted. Var. *tenuifolius*, leaves obovate, membranaceous, smooth beneath : pistillate flowers 4—5-cleft, sub-solitary. Sometimes this shrub is monœcious, and sometimes perfect-flowered. Generally in wet places. Berries red, permanent. 4—8 f. *S.*

glaber, (ink-berry. E. Ju. ♄.) leaves evergreen, wedge-lanceolate, coriaceous, glabrous, shining, equally sub-dentate above : pedicels axillary, sub-solitary, mostly 3-flowered. 3—4 f. *S.*

lævigatus, Ph. (Ju. ♄.) leaves deciduous, lanceolate, close-pressed, serrate, acuminate, glabrous both sides, shining at the upper side, hardly pubescent at the nerves beneath : pistillate flowers axillary, solitary, sub-sessile ; staminate flowers scattered ; all 6-cleft. 6—8 f. *S.*

ambiguus, Mx. (E. w. Ju. ♄.) leaves deciduous, oval, acuminate at both ends, mucronate-serrulate, sub-pubescent beneath : flowers 4 or 5-cleft ; staminate ones crowded together at the lower branches ; pistillate ones solitary. Wet or damp. 3—5 f. *S.*

Southern.

integrifolia, E. (E. ♄.) leaves deciduous, oval, entire, mucronate, petioled, glabrous on both sides : pistillate flowers solitary, long-peduncled. A small tree.

lanceolatus, Ph. (E. J. ♄.) leaves deciduous, lanceolate, finely and remotely serrulate, acute at each end, glabrous on both sides : pistillate flowers scattered, generally in pairs, peduncled, 6-cleft ; staminate ones aggregate, triandrous. Berries small, scarlet.

coriaceous, Ph. (2) (E. M. ♄.) leaves perennial, broad-oval, acute, serrate near the apex, lucid above, minute-punctate beneath : pistillate flowers solitary, about 8-parted ; staminate ones aggregate, octandrous. Var. *latifolia*, leaves lance-obovate, acuminate. Var. *angustifolia*, leaves lanceolate, acute. 5—6 f.

Floerkea.

(1) gronovii, Mx. (2) atomarius, *N.*

3—3. PROSERPINACA. 15. 22.

palustris, (mermaid weed. E. g. Ju. ☼) leaves linear-lanceolate, serrate above water, pinnatifid below. Water. *S.*

pectinata, Lk. (E. g. Ju. ☼.) leaves all pectinate-pinnatifid. Water. *S.* Polycarpon.

10—1. PROSOPIS. 33. 93.

Southern.

glandulosa, T. & J. (W. ♄.) spines thick, cylindric-conic: leaves conjugate-pinnate or pinnate in one pair; leafets distant, 6—7-pairs, linear, sub-falcate, obtuse, glabrous, sub-coriaceous: petiole between the leaves and leafets glandular: legumes straight: spikes cylindric. Arbutus.

14—1. PRUNELLA. 42. 39.

vulgaris, var. *pennsylvanica*, (heal-all, self-heel. O. J. ♃.) leaves petioled, oblong-ovate, toothed at the base: lips of the calyx unequal; upper one truncate, awned: stem ascending. 6—12 i. *S.* Scutellaria.

12—1. PRUNUS. 36. 92.

1. *Flowers in racemes.*

virginiana, (1) (wild cherry, rum cherry, cabinet cherry. O. w. M. ♄.) racemes erect, elongated: leaves oval-oblong, acuminate, unequally serrate, glabrous both sides: petioles generally bearing 4 glands. In open fields the limbs of this tree spread out into an elegant oval top; but in dense forests it grows to a very great height, with a few contracted branches. *S.*

serotina, W. (2) (choke-berry. O. w. J. ♄.) flowers in lax racemes: leaves oval, short-acuminate, opake, doubly and acutely serrate: midrib bearded on each side towards the base: petiole with 2 glands. This and the preceding species have been confounded by many Botanists. T. *S.*

canadensis, (O. w. ♄.) flowers in racemes: leaves glandless, broad-lanceolate, rugose, sharply serrate, pubescent both sides, tapering into the petiole. *S.*

obovata, Bw. (E. w. M. ♄.) racemes spreading: leaves obovate, acute, very sharp-serrate, glabrous. Fruit red, bitter and astringent. A large shrub.

2. *Peduncles sub-umbellate or solitary.*

pennsylvanica, A. (3) (E. w. M. ♄.) flowers sub-corymbed: pedicels elongated: leaves oval-oblong, acuminate, erose-denticulate, smooth: petioles with 2 glands: branches punctate. *S.*

pygmæa, W. (american sloe. O. w. M. ♄.) umbels sessile, aggregated, few-flowered: leaves oval-ovate, acute, glabrous both sides, sharply serrate, 2 glands at the base. 3—4 f. *S.*

americana, Marshall. (4) (meadow plum. O. M. w. ♄.) somewhat thorny? pedicels aggregated, 3—5: stipules setaceous, compound: leaves oblong-oval and obovate, abruptly and strongly acuminate, doubly serrate: fruit sub-ovate, mostly solitary, reddish yellow, with a thick coriaceous skin. 12—15 f. Dn. M. S. Plum about the size of the damson; very sweet when ripe, stiptic before. *S.*

chicasa, Mx. (5) (summer plum, meadow plum? w. M. ♄.) branches very glabrous, somewhat thorny: leaves oblong-oval, acute or acuminate, minutely serrate: buds aggregated, each about 2-flowered: pedicels very short: divisions of the glabrous calyx obtuse: fruit sub-globose. The plums are yellow and reddish?

pubescens, Ph. (6) (E. M. ♄.) umbels sessile, aggregated, few-flowered: pe-

(1) rubra, A. Cerasus, Mx. (2) virginiana, Miller. (3) lanceolata, W. borealis, Ph. Cerasus borealis, Mx. (4) hiemalis? Mx. nigra? M. spinosa? Wr. (5) insititia, Wr. (6) sphaerocarpon, Mx.

duncles and calyx pubescent: leaves short-oval, serrulate: drupe spherical. 2—3 f.

maritima, Mx. (L. w. M. ♄.) peduncles sub-solitary: leaves ovate-oblong, acuminate, doubly serrate. Pursh has copied in the P. *acuminata* of Mx. as a synonym, which is—branchlets glabrous: leaves oblong-oval, long, acutely acuminate: calyx glabrous: drupe long-peduncled, ovate, acuminate.

pumila, (E. w. M. ♄.) umbels sessile, aggregate, few-flowered: calyx acute: branches wand-terete: leaves narrow-lanceolate, serrate above, the under sides pale. 2—3 f. *S.*

depressa, Ph. (sand cherry. O. w. M. ♄.) umbels sessile, aggregate, few-flowered: calyxes obtuse: branches angled, depressed, prostrate: leaves wedge-lanceolate, remotely serrate, glabrous, glaucous beneath: fruit ovate. Is this the pumila?

susquehanna, W. (E. w. M. ♄.) peduncles solitary: leaves obovate-oblong, glaucous beneath, serrate, entire at the base.

mollis, T. (E. ♄.) young branches, leaves and peduncles pubescent: umbels sessile, 2—3-flowered: leaves ovate, long-acuminate, doubly tooth-serrate: stipules setaceous, denticulate: calyx nearly smooth; divisions lance-linear, serrate.

littoralis, Bw. (beach plum. L. w. M. ♄.) umbels crowded, few-flowered: peduncles and calyx sub-pubescent: leaves oval, acute, serrate, with the veins pubescent beneath. The size and colour of the fruit is subject to considerable variation. Bw.

serasifera, W. (w. M. ♄.) peduncles solitary: leaves oval, glabrous: fruit pendant: branches almost thornless.

Exotic.

spinosa, W. (english sloe. ♄.) peduncles solitary: leaves lance-oval, pubescent beneath: fruit straight: branches thorny.

cerasus, (garden cherry. w. r. ♄.) umbel sub-peduncled: leaves lance-ovate, glabrous, conduplicate.

padus, (bird cherry. w. M. ♄.) flowers racemed, lax: leaves doubly serrate, sub-rugose, petioled, with 2 glands.

avium, (small bird cherry. w. ♄.) umbels sessile: leaves lance-ovate, pubescent beneath, conduplicate.

domestica, (plum. w. M. ♄.) peduncles sub-solitary: leaves lance-ovate, convolute: branches thornless. Var. *juliana*, (damson plum) fruit oblong, blue. Var. *claudiana*, (sweet plum. horse plum) fruit round, at first green, becoming yellowish. Var. *enucleata*, (stoneless plum) the putamen obsolete.

Southern.

caroliniana, W. (1) (E. w. Ap. ♄.) flowers racemed: leaves perennial, lance-oblong, mucronate, serrate and entire, glandless, smooth. Middle size tree.

semperflorens, W. (W. M. ♄.) racemes leafy, pendulous: calyx serrate: leaves ovate, serrate, glabrous, glandular at the base. Small shrub.

hirsutus, E. (E. Ap. ♄.) racemes straight: leaves oval, serrulate, glandless, under surface, calyx, peduncles and petioles hirsute. 3—4 f.

umbellata, E. (E. w. Mar. ♄.) umbels terminal, many-flowered: leaves lance-olate, sub-acuminate, serrulate, glabrous, with 2 glands at the base: calyx pubescent. Lythrum.

3—2. PSAMMA. (2) 4. 10.

arenaria, (L. Au. 2[.) panicle spiked calyx acute: corol thrice as long as the chaff: leaves involute. 2—3 f. *S.* Crypsis.

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(1) Lusitanea, Wr. (2) Arundo, L.

21—1. PSILOTUM. 55. 5.

Southern.

triquetrum, Sz. (1) E. J. 2f.) stem naked, dichotomous, with the branches 3-angled. Lycopodium.

16—10. PSORALEA. 32. 93.

esculenta, Ph. (bread root. W. b. J. 2f.) wholly villose: leaves quinate-digitate; leafets lanceolate, unequal, flat, very entire: spikes axillary, dense-flowered: divisions of the calyx lanceolate, a little shorter than the corol: legume ensiform, beaked: root fusiform. The root affords a staple article of diet to the western Indians. 12—18 i. *S.*

ternata, N. (2) (W. b. Ju. 2f.) wholly silky-tomentose: leaves quinate and ternate: leafets lance-oblong: spikes terminal, interrupted: bracts ovate, acuminate: flowers nearly opposite, sessile. 12 i. *S.*

Southern.

canescens, Mx. (E. y. J. 2f.) hoary: leaves ternate, short-petioled, broad-lanceolate: spikes lax-flowered: flowers pedicelled: calyx pilose. 2—3 f.

tenuiflora, Ph. (W..b. S. 2f.) pubescent, very branching: leaves ternate; leafets oval, rugose-punctate on both sides: peduncles axillary, about 3-flowered, longer than the leaves. 2 f.

lanceolata, Ph. (3) (W. w-b. Au. 2f.) sub-pubescent: stem erect, sparingly branched: leaves ternate; leafets oval and lance-oval, obtuse, sub-mucronate: peduncles longer than the leaves: spikes capitate, many-flowered bracts deciduous: teeth of the calyx small, obtuse. 1 f.

lupinella, Mx. (E. p. J. 2f.?) glabrous: leaves digitate, long-petioled; leafets filiform: racemes many-flowered, longer than the leaves: legumes rugose. 2 f.

longifolia, Ph. (W. w.? 2f.) wholly silky-villose: leaves ternate; leafets long-linear: spikes axillary, peduncled, lax-flowered, shorter than the leaves: teeth of the calyx and bracts subulate.

cuspidata, Ph. (W. 2f.) villose: leaves digitate-quinate; leafets obovate, mucronate, very entire: spikes axillary, dense-flowered: divisions of the calyx and bracts ovate, cuspidate, distinctly punctate.

onobrychis, N. (4) (W.) stem smooth: leaves ternate; leafets lance-ovate, sub-pubescent: racemes axillary, long-peduncled: flowers one-sided: legume sub-ovate, muricate, smooth. 3—5 f.

virgata, N. (E. b. 2f.) stem virgate, sub-pubescent: leaves simple, distant, lance-linear: spikes axillary, shorter than the leaves. 2 f.

melilotoides, Mx. (E. p. J. 2f.?) sub-pubescent: leaves ternate; leafets lance-oblong: spikes oblong: bracts broad-cordate, long-acuminate: legumes round, nerved, very rugose. 1—2 f.

eglandulosa, E. (5) (E. p. J. 2f.) pubescent, without glands: leaves ternate, lance-oblong: spikes oblong: bracts broad-lanceolate, long acuminate, and with the calyx villose.

multijuga, E. (E. p. J.) stem branching: leaves pinnate; leafets numerous, (9—10 pairs,) lance-oblong, obtuse, pubescent: spikes oblong: bracts small, membranaceous, glandless. 1—2 f.

jamesii, T. (W.) leaves ternate; leafets obovate, very obtuse, wedge-form at the base, very entire, both sides silky: petioles pubescent: spikes capitate: bracts oblong, acuminate: calyx very hirsute: teeth subulate, nearly equal. 4 i.

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(1) floridanum, Mx. Hoffmannia aphylla, W. Bernhardia dichotoma, Ph. Lycopodium nudum, L. (2) argophylla, Ph. (3) elliptica, Ph. arenaria, N. (4) hedisarioides, M.? (5) Melilotus psoraloides, N.

latifolia, T. &. J. (W. J. 2[.) leaves ternate ; leafets broad-ovate, acuminate, nearly glabrous, ciliate on the margin : terminal one long-petioled : peduncles axillary : spikes lax-flowered, elongated : bracts caducous : calyx glabrous : teeth acutish. 2—3 f. This and the preceding species probably belong to some other genus. T. Dalea.

5—1. PSYCHOTRIA. 30. 57.

[Generic description is here given, it having been omitted at page 28. It should follow Chiococca, and stand above the words *seeds in a berry*.] Calyx 5-toothed, crowned : corol funnel-form : berry ? globose or oval : seeds two, sulcate, bony.

Southern.

lanceolata, N. (E. ♄.) stipules clasping, roundish, caducous : leaves lanceolate, acuminate at each end, pubescent : peduncles trichotomous, few-flowered. Lonicera.

4—1. PTELEA. 43. 94.

trifoliata, (E. g-w. J. ♄.) leaves ternate : flowers panicled, dioecious. Var. *pentaphylla*, leaves quinate. Var. *pubescens*, leaves pubescent. 6—8 f. *S.*

Southern.

monophylla, Lk. (E.) leaves simple, lance-ovate, sub-sessile : fruit 3-winged. Krameria.

21—2. PTERIGOPHYLLUM. 56. 4.

rigidum, stem erect, pinnate above : leaves somewhat 2-ranked, obovate, mucronate, serrate, 2-nerved. Hypnum.

21—2. PTERIGYNANDRUM. 56. 4.

intricatum, creeping and rooting, entangled : branches simple, short : leaves concave, acuminate, lanceolate, lengthened out : capsule oblong-ovate ; lid sub-oblique. On the trunks of trees.

filaceum, stem erect, terete : leaves thick-imbricate, oval, acuminate, smooth : peduncles scarcely projecting out of the long pericheth : capsules short-ovate ; lid conic : calyptre glabrous. On trunks of trees.

brachycladon, stem creeping : branches very short, crowded, erect, simple, terete, acutish : leaves lance-ovate, acuminate, nerveless : capsules erect, sub-cylindric, with a long-conic, sub-oblique lid.

hirtellum, branchlets slender-filiform, simple, short : leaves imbricated in a cylinder, sub-cordate, a little hirsute, fringed : capsule oblong ; lid long-conic. On trees.

sub-capillatum, creeping, rarely rising, simple, flower-bearing : leaves ovate-acuminate, with a halved prolongation, imbricate : capsule oblong ; lid beaked : calyptre sub-pilose. Lasia.

21—1. PTERIS. 55. 5.

aquilina, (common brake. O. Ju. 2[.) frond pinnate, 3-parted : barren branches doubly pinnate, with leafets lance-linear, obtuse-pinnatifid, toothed ; fertile branches pinnate, with leafets pinnatifid ; divisions acutish, all ciliate. *S.*

atropurpurea, (rock brake. O. Ju. 2[.) frond pinnate : lower leafets lanceolate, obtuse, ternate or pinnate ; at the base obtusely truncate or sub-cordate. Var. *venosa*, leafets veined beneath : stipe angled. Var. *punctata*, leafets punctate beneath : stipe terete. In ripening, the marginal involucre unrolls, and the capsules on opposite sides meet ; so that it exhibits the generic character of the Acrostichum. Stipe dark-purple. 3—10 *i*. *S.*

gracilis, Mx. (E. Ju. 2f.) frond pinnate : leafets lanceolate, obtuse, alternate, sessile ; lower ones pinnatifid ; fertile ones entire ; barren ones crenate, round-obtuse. 4 i.

caudata, Jn. (Au. 2f.) frond 3-parted-pinnate : barren branches doubly pinnate : leafets linear, elongated, obtuse, entire ; lower ones doubly pinnatifid : fertile branches pinnate : leafets remotish below, at the base pinnatifid-toothed. *S.*

Southern.

pedata, W. (E. Ju. 2f.) frond deeply 5-lobed-palmate ; lobes pinnatifid ; divisions lance-linear, acute. 6 i. Adiantum.

17—2. Pterocaulon. 49. 55.

Southern.

pycnostachya, Mx. (1) (E. w. Au. 2f.) Described under Conyza pycnostachya. Erigeron.

10—1. Pterospora. 18. 51.

andromeda, N. (2) (Albany beech-drops. E. r-y. Ju. ☼.) scape purple, very tall, bearing a many-flowered raceme : flowers lateral and terminal, nodding : peduncles filiform, longer than the flowers : lanceolate scales below, none above. 1—2 f. Monotropsis.

21—6. Puccinia. 58. 1.

polygoni-avicularis, sub-linear, scattered, chesnut-brown : fruit globose. On the stems and leaves of knotgrass.

graminis, (blight, black rust.) crowded, linear, becoming black : fruit subturbinate, narrowed in the middle. In the culms of wheat and various other grasses, in summer and autumn. Trichoderma.

5—1. Pulmonaria. 41. 42.

virginica, (E. b. M. 2f.) smooth : stem erect : calyx much shorter than the tube of the corol : radical leaves oblong-obovate, obtuse ; cauline ones narrower. *S.*

paniculata, A. (E. b-w. J.) sub-hirsute, erect : leaves ovate-oblong, acuminate : flowers panicled : calyx short 5-parted. Hudson's Bay.

Exotic.

officinalis, (lung-wort. b. M. 2f.) radical leaves heart-ovate, hirsute : flowers racemed.

Southern.

lanceolata, Ph. (3) (W. b. w. 2f.) glabrous, erect : radical leaves very long-petioled, lanceolate ; cauline ones linear-oblong : flowers sub-panicled : calyx short.

alpina, T. & J. (W. b. 2f.) nearly glabrous : stem simple, assurgent : leaves spatulate-ovate ; lower ones acute ; upper ones acuminate, sub-pilose above, minutely ciliate on the margin : flowers in terminal fascicles, sub-sessile : divisions of the calyx oblong, obtusish, ciliate, about half the length of the corol. 6 i.

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(1) Conyza, Mx. (2) Monotropa procera, 2d ed. This plant was discovered near Albany, in the summer of 1817, by Dr. Edwin James. He considered it a Monotropa, and I published it as described by Dr. Torrey, in the second edition of this work, under the name M. *procera*. Certainly the Monotropa, Hypopithys and Pterospora, ought to be united in one genus, with some extension of the generic description. (3) marginata, N.

ciliata, J. (W. b.) glabrous, erect? leaves lance-ovate, attenuate at each end, ciliate on the margin: flowers fascicle-panicled, pedicelled: corol tubular-bellform: calyx short, 5-parted; divisions ovate, obtuse. 1 f.
Lithospermum.

Pulmonaria, LITHOSPERMUM.

11—1. PUNICA. 36. 92.

Exotic.

granatum, (pomegranate. ♄.) leaves lanceolate: stem woody. Torreya.

Purshia, ONOSMODIUM.

13—1. PYCNANTHEMUM. 42. 39.

1. *Stamens exsert.*

incanum, (1) (wild basil, mountain mint. O. w. r. Ju. 2f.) leaves oblong-ovate, acute, sub-serrate, white downy: flowers in compound heads, lateral ones peduncled: bracts setaceous. 1—5 f. *S.*

aristatum, Mx. (E. w. Au. 2f.) leaves lance-ovate, sub-serrate, short-petioled, somewhat hoary: head sessile, terminal: bracts awned. 1—3 f. *S.*

linifolium, Pb. (2) (virginian thyme. E. w. Ju. 2f.) glabrous: leaves linear, 3-nerved, entire, punctate, acute: heads terminal, sub-corymbed: bracts short awned. 1—2 f. *S.*

virginicum, (3) (narrow-leaf virginian thyme. O. w. J. 2f.) pubescent: leaves sessile, lance-linear, entire, punctate: heads terminal, corymbed: bracts acuminate. 12—18 i. *S.*

2. *Stamens inclosed.*

muticum, Mx. (4) (E. w. Ju. 2f.) leaves lance-ovate, sub-dentate, ribbed, sub-glabrous: heads terminal: bracts lanceolate, acutish. 18—24 i. *S.*

verticillatum, Mx. (4) (A. w. J. 2f. leaves lance-ovate, entire or remotely sub-denticulate, pubescent: whorls sessile, compact: bracts acuminate. 18—24 i. *S.*

Southern.

montanum, Mx. (A. p. 2f.) leaves lance-oval, serrate, sub-sessile: heads sessile: bracts ciliate, acuminate: calyx erect with short teeth. 1 f.

monardellum, Mx. (A. w-r. Ju. 2f.) pubescent: leaves abruptly petioled, sub-cordate-oval, serrate: bracts large, coloured, ciliate: calyx bearded at the summit. 2—3 f.

nudum, N. (A.) very glabrous: stem simple: leaves oblong-ovate, entire, sessile: heads pedicelled, few-flowered, naked: stamens exsert. 2 f.

pilosum, N. (W. J.) leaves sessile, lanceolate, tomentose beneath, obsoletely toothed: heads large, terminal: lance-ovate bracts and calyx, hoary-tomentose. 18—24 i.
Lavandula.

21—5. PYRENULA. 57. 2.

nitida, crust cartillage-membranaceous, smooth; from pale becoming fuscous-cinereous: warts of the receptacles glabrous, closed; closely surrounding the upper, naked, prominent wrinkled part of the frond, which is perforated with a depressed mouth. On bark of trunks of trees.

enteroleuca, Sp. crust membranaceous, very white, sub-lucid, under the microscope cracked and rugged: receptacle above the crust though surrounded by it at the base, cupuli-form, open at the top (like a Lecidea:) margin black with a grey bloom: nucleus hemispheric, whitish, with a black prui-

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(1) Clinopodium, L. (2) virginicum, P. Brachystemum virginicum, Mx. linifolium, W. Thymus virginicus, L. Organum flexuosum, W. (3) Brachystemum, Mx. Origanum clinopodioides, Wr. (4) Brachystemum, Mx.

nose disk. This has much the habit of a Lecidea and may be the L. urceolata of Acharius. Halsey. Common on trunks.

nigrescens, Ach. crust tesselated, blackish : receptacle on the areolae, shining, black, hardly visible to the naked eye. On rocks.

margacea, Ach. crust ashy, rugged, and warty : receptacle globose, (resembling a Porina with several orifices.) Common on rocks. Variolaria.

10—1. PYROLA. 18. 51.

rotundifolia, (shin-leaf, pear-leaf wintergreen. O. w. J. 2f.) style declined : leaves rounded or broad-oval obsoletely serrulate, sub-coriaceous, shining : petiole about as long as the lamina : scape many-flowered. 6—12 i. *S.*

elliptica, N. (O. w. J. 2f.) style declined : leaves membranaceous, oblong-oval or ovate, plaited-serrate, abruptly acute : lamina much longer than the petiole : scape naked, or having a single scale : bracts subulate : calyx 5-toothed. 6—10 i.

asarifolia, Mx. (1) (O. g-w. Ju. 2f.) style declined : leaves sub-reniform, generally emarginate, coriaceous, lamina shorter than the petiole : scape sometimes convolute. 6—8 i.

lentata, S. (W.) style declined : leaves obovate or oval, veined, remotely and obtusely toothed : scape straight, obscurely angular, nearly naked. 6 i.

picta, S. (W.) style declined : leaves ovate, sub-serrate, rather fleshy, with large branching veins and whitish spots : flowers secund?

aphylla, S. (W.) style declined : scape and stalk leafless, scaly : scales lanceolate, membranaceous : scape angular.

minor, (w-r. Ju. 2f.) style straight : leaves round-oval, serrulate : scape subnaked : spike with flowers reversed.

secunda, (one-sided shin-leaf. O. g-w. Ju. 2f.) style straight : leaves round-ovate, acute, serrate : spike with 1-sided flowers. 6—8 i.

uniflora, (E. J. 2f.) style straight : leaves sub-orbicular, serrate : scape 1-flowered. Chimaphila.

Pyrola, CHIMAPHILA.

11—5. PYRUS. 36. 92.

coronaria, (2) (crab apple. O. w-r. M. ♄.) leaves broad oval, at the base rounded, sub-angled or sub-lobed, serrate, smooth : peduncles corymbed. Flowers sweet scented. *S.*

angustifolia, A. (M. ♄.) leaves lance-oblong, at the base acute : slightly crenate-toothed, shining : peduncles corymbed. Fruit very small. *S.*

Exotic.

communis, (pear. E. w-r. M. ♄.) leaves ovate, serrate, (rarely entire :) peduncles corymbed. Var. *pyraster*, (dwarf) fruit very small and acid. Var. *falerna*, (bergamot) fruit orbicular, apple-form. Var. *pompeiana*, (good christian.) Var. *favonia*, (musk-pear.) Var. *liquescens*, (butter-pear.) Var. *refusans*, (russet-pear.) Var. *pyramidalis*, (leg-pear.) These five last varieties are distinguished more by their flavor than by any external marks.

malus, (apple. E. w-r. M. ♄.) flowers in sessile umbels : leaves ovate-oblong, acuminate, serrate, glabrous : claws of the petals shorter than the calyx : styles glabrous. Var. *sylvestris*, (wild apple) leaves ovate serrate : fruit small, austere. Var. *prasomila*, (pippin.) Var. *castanea*, (chesnut-apple.) Var. *apiosa*, (ape-apple) fruit small, round, red, pleasant-tasted. Var. *cavillea*, (cornered apple) leaves broad-ovate, downy beneath : fruit angled.

cydonia, (quince. E. w. J. ♄.) flowers solitary : fruit tomentose : leaves ovate, entire. Var. *lusitanica*, leaves very broad.

Remark. The varieties into which the above species have been extended by

(1) chlorantha, N. (2) Malus, Mx.

culture, are very numerous. I have given those only which are set down by Persoon as the most distinct. Spiraea.

Pyrus, ARONIA.

Pyxidanthera, DIAPENSIA.

Q.

19—2. QUERCUS. 50. 99.

1. *Fruit sub-sessile: leaves mucronate, with a bristle-form awn, entire.* Fructification biennial.

phellos, (willow oak. E. M. ♄.) leaves lance-linear, tapering to both ends, entire, glabrous, mucronate: calyx saucer-form: acorn roundish. Var. *humilis*, low and straggling: leaves shorter. 30—60 f. *S.*

imbricaria, Mx. (shingle oak, laurel oak. P. M. ♄.) leaves oblong, acute at both ends, mucronate, entire, shining, pubescent beneath: calyx saucer-form, scales broad ovate: acorn sub-globose. 40—50 f. *S.*

2. *Fruit sub-sessile: leaves mucronate, with a bristle-form awn, toothed or lobed.* Fructification biennial.

heterophylla, Mx. (burrier's oak. M. ♄.) leaves long-petioled, lance-ovate or oblong, entire or unequally coarse-toothed: calyx hemispheric, acorn sub-globose. Pursh says there is but one individual of this species known in the world, which is now growing on the Bartram plantation near Philadelphia.

agrifolia, W. (W. ♄.) leaves roundish-ovate, sub-cordate, glabrous on both sides, remotely spinose-toothed: calyx hemispheric, scales lax: acorn ovate-acute.

triloba, W. (1) (downy black oak. E. M. ♄.) leaves wedge-oblong, acute at the base, sub-3-lobed at the apex: lobes equal in breadth, mucronate; middle lobe longest, downy beneath: calyx saucer-form: acorn compressed, globose. 20—40 f. *S.*

aquatica, W. (2) (water oak. E. M. ♄.) leaves wedge-ovate, glabrous, very entire: apex obscurely 3-lobed, with the intermediate lobe longest: calyx hemispheric: acorn sub-globose. Leaves very variable. 30—40 f. *S.*

nigra, (3) (barren oak, black jack. E. M. ♄.) leaves coriaceous, wedge-form, sub-cordate at the base, spread and retuse-3-lobed at the apex: in the young state it is mucronate, glabrous above, mealy-rust beneath: calyx turbinate: scales obtuse, scarious: acorn short-ovate. Small. *S.*

tinctoria, Bart. (4) (quercitron oak, black oak. O. M. ♄.) leaves obovate-oblong, a little sinuate, pubescent beneath: lobes oblong, obtuse, obtusely denticulate, setaceous-mucronate: calyx saucer-form: acorn depressed-globose. 60—70 f. *S.*

discolor, A. (5) false red oak. O. M. ♄.) leaves oblong, sinuate-pinnatifid, pubescent beneath, and on both sides when young: lobes oblong, toothed, setaceous-mucronate: calyx turbinate: acorn ovate. 60—70 f. *S.*

coccinea, Wm. (scarlet oak, ink-ball oak. O. M. ♄.) leaves long-petioled, oblong, deeply sinuate, glabrous: lobes divaricate, toothed, acute, setaceous-mucronate: calyx turbinate, marked with scales: acorn short-ovate. This, the last species, and the *rubra*, are usually called red-oak by farmers; and it requires some attention for the botanist to distinguish them. The leaves of this species become reddish, and even scarlet in autumn. Produces brownish-purple nut-galls. 70—80 f. *S.*

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(1) cuneata, Wm. (2) nigra, L. not W. uliginosa, Wm. (3) ferruginea, Mx. (4) tinctoria-angulosa, Mx. (5) tinctoria-sinuosa, Mx.

ambigua, Mx.!(gray oak. E. M. ♄.) leaves sinuate, glabrous, acute at the base: lobes sub-acute: calyx nearly saucer-form: acorn turgid, ovate. Intermediate between the preceding and the following one, and probably only a hybrid. Ph.

rubra, (red oak. O. M. ♄.) leaves long-petioled, oblong, glabrous, obtusely sinuate: lobes acutish, toothed, setaceous-mucronate: calyx saucer-form, smoothish: acorn sub-ovate, turgid. 70—80 f. *S.*

catesbaei, Mx. (barren scrub oak. M. ♄.) leaves short-petioled, wedge-form at the base, oblong, coriaceous, glabrous, deeply sinuate; lobes divaricate, acute, mucronate: calyx turbinate, large, scales obtuse; marginal ones inflexed: acorn ovate. 15—30 f. *S.*

falcata, Mx. (1) (spanish oak. E. M. ♄.) leaves long-petioled at the base, obtuse, downy beneath, 3-lobed or sinuate: lobes sub-falcate, setaceous-mucronate, terminal one elongated: calyx bowl-form: acorn globose. 70—80 f. *S.*

palustris, W. (pin oak. O. M. ♄.) leaves long-petioled, oblong, deeply sinuate, glabrous; axils of the veins villose beneath; lobes divaricate, toothed, acute, setaceous-mucronate: calyx saucer-form, smooth: acorn sub-globose. Generally grows in wet places. The small limbs along the body of the tree die as the tree advances, which gives it the appearance of having pins or trunnels driven into it. 40—60 f. *S.*

ilicifolia, W. (2) (scrub oak. O. M. ♄.) leaves long-petioled, wedge-obovate, 4 or 5-lobed, margin entire, whitish downy beneath: lobes setaceous-mucronate: calyx sub-turbinate: acorn sub-globose. 3—9 f. *S.*

3. *Fruit peduncled: leaves without awns, lobed.* Fructification annual.

obtusiloba, Mx. (3) (iron oak, post oak. E. M. ♄.) leaves oblong, sinuate, wedge-form at the base, pubescent beneath: lobes obtuse, upper one dilated, 2-lobed, (often the lobes are so arranged in the young plants as to form a cross-form or stellate leaf:) calyx hemispheric: acorn oval. 30—50 f. *S.*

macrocarpa, Mx. (over-cup oak. W. M. ♄.) leaves downy beneath, deeply lyrate-sinuate-lobed; lobes obtuse, repand, upper ones dilated: calyx bowl-form, upper scales setose: acorn turgid, ovate, large. A large tree. *S.*

olivæformis, Mx. (mossy-cup oak. O. M. ♄.) leaves oblong, glabrous, glaucous beneath, deeply and unequally sinuate-pinnatifid: calyx deeply bowl-form, fringed above: acorn oval-ovate. Large tree. *S.*

alba, (white oak. O. M. ♄.) leaves oblong, sinuate-pinnatifid, pubescent beneath; lobes obtuse, entire, narrowed at their bases, particularly on full-grown trees: fruit peduncled: calyx somewhat bowl-form, tubercled flattened at the base: acorn ovate. The most useful timber-tree in America. 70—80 f. *S.*

4. *Fruit peduncled: leaves without awns, toothed, not lobed.* Fructification annual.

prinus, W. (4) swamp oak. E. M. ♄.) leaves long-petioled, obovate, acute, pubescent beneath, coarsely toothed; teeth about equal, spread, callous at the apex: calyx bowl-form, tapering at the base: acorn ovate, large, sweet tasted. Large tree. 70—80 f. *S.*

chinquapin, Mx. (5) (dwarf chesnut oak, chinquapin. O. M. ♄.) leaves short-petioled, obovate, at the base acute, coarsely toothed, glaucous beneath: teeth nearly equal, spread, callous at the apex: calyx hemispherical: acorn ovate. A low shrub. 3—4 f. *S.*

montana, W. (6) (rock oak, chesnut oak, mountain oak. A. M. ♄.) leaves moderately petioled, broad-obovate, oblong, white downy beneath, shining above; coarsely toothed, at the base obtuse, oblique; teeth sub-equal, very obtuse, short: fruit in pairs, short-peduncled: calyx hemispheric: scales rugose, tubercled: acorn ovate. 30—40 f. *S.*

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(1) elongata, W. (2) banisteri, Mx. (3) stellata, W. (4) prinus-palustris, Mx. (5) prinoides, W. (6) prinus monticola, Mx.

castanea, W. (1) (yellow oak. E. M. ♄.) leaves long-petioled, lance-oblong, obtuse at the base, acuminate, downy beneath, coarsely toothed; teeth subequal, spread, acute, callous at the apex: calyx hemispheric: acorn globular-ovate.—Large tree. The bark is used for dying yellow. 60—70 f. *S.*

bicolor, W. (2) (swamp white oak. E. M. ♄.) leaves short petioled, oblong-obovate, white-downy beneath, coarsely toothed, entire at the base: teeth unequal, spread, acutish, callous at the apex: fruit in pairs, long-peduncled; the peduncle terminating in a bristle: calyx hemispheric: acorn oblong-ovate. Var. *mollis*, N. leaves toothed, sub-ferruginous and soft-pubescent beneath. 60—70 f. *S.*

Southern.

maritima, W. (L. Ap. ♃.) leaves perennial, coriaceous, lanceolate, entire, glabrous, tapering at the base, acute at the apex, mucronate: calyx peduncled: acorn oval mucronate. 4—10 f.

pumila, Wr. (3) (L. Ap. ♄.) leaves lance-oblong, sub-undulate, obtuse at the base, acute, mucronate at the apex, glabrous above, tomentose beneath: acorn sub-globose. 2 f.

myrtifolia, W. (E. ♄.) leaves perennial, coriaceous, small, oblong-ovate, unawned, acute at each end, glabrous, shining and reticulate above, revolute at the margin.

virens, W. (4) (live oak. O. M. ♄.) leaves perennial, coriaceous, oblong-oval, entire, revolute at the margin, at the base obtuse, at the apex acute, awnless, stellate-pubescent beneath: fruit pedicelled: calyx turbinate: scales abbreviated: acorn oblong. 40—60 f.

cinerea, Mx. (E. Ap. ♄.) leaves perennial, coriaceous, lance-oblong, entire, sub-revolute at the margin, mucronate at the summit, stellate-tomentose beneath: fruit sessile: acorn sub-globose. 20 f.

laurifolia, Mx. (E. Ap. ♄.) leaves nearly perennial, sessile, lance-oblong, subacute, tapering at the base, entire, glabrous on both sides: acorn sub-ovate. Var. *obtusa*, leaves obtuse at the apex. 40—50 f.

hemispherica, W. (E. M. ♄.) leaves perennial, lance-oblong, undivided, 3-lobed and sinuate; lobes mucronate: glabrous on both sides. Probably a variety of the equatica. Ph.

nana, W. (E. M. ♄.) leaves wedge-form, glabrous, 3-lobed at the summit, sub-sinuate at the base; lobes divaricate, mucronate; middle one largest; axils of the veins beneath pubescent: acorn ovate, sub-globose.

lyrata, Wr. (E. Ap. ♄.) leaves oblong, sinuate, glabrous; lobes oblong, subacute; upper ones broad, angled: calyx as large as the globose nut: acorn nearly covered. 60—70 f.

michauxii, N. (E. Ap. ♄.) leaves petioled, obovate, obtuse at the base, unequally toothed, sinuate, tomentose beneath: fruit generally in pairs: acorn very large, ovate. 50—60 f.

undulata, T. & J. (W. ♄.) fruticose, very branching: leaves short-petioled, oblong, obtusish, coriaceous, repand-toothed, undulate, equal at the base, pulverulent-tomentose beneath, shining above: fruit solitary or in pairs, sessile, depressed-hemispheric: calyx scales appressed. A small straggling shrub.

Corylus.

3—3. QUERIA. 22. 82.

canadensis, (5) (fork chickweed. O. w. Ju. ♃.) stem dichotomous, very branching, spread: leaves lanceolate, glabrous, erect. About 6 or 8 inches high, very slender and branching. Flowers very small, stamens from 2 to 5. Var. *capillacea*, branches capillary: leaves obtusish: flowers mostly longer than the stipules.

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(1) prinus acuminata, Mx. (2) prinus tomentosa and discolor, Mx. (3) sericea, W. (4) sempervirens, Wr. (5) Anychia dichotoma, Mx.

Southern.

dichotoma, W. (1) (O. S. 2f.) caespitose, procumbent, glabrous: leaves acerose, linear, acute, with 2 grooves on each side: cyme dichotomous: stipules 2-cleft: bracts shorter than the flowers: divisions of the calyx minute-mucronate.

herniarioides, Mx. (2) (E. Ju. 2f.) prostrate, clustered, all over pubescent: leaves oblong-oval, ciliate, mucronate: divisions of the calyx subulate, spreading and setaceous at the point.

argyrocoma, M. (2) (E. J. 2f.) caespitose, procumbent: stems pubescent: leaves linear, very acute, sub-pilose: the little heads fascicled, terminal, silvery: calyx pilose, with the tips bearded and long-acuminate.

sessiliflora, N. (3) (W. Ju.) caespitose, diffusely branched: leaves glabrous, very short, linear, reflected, acute: stipules subulate, irregularly lacerate, nearly equal to the leaves: flowers terminal, sessile: outer points of the calyx capillary, attenuated. Glaux.

R.

21—6. Racodium. 58. 1.

rupestre, compact, black, adnate to rocks.

cellare, broad-expanded, very soft, black. Often in wine cellars, &c.

xylostroma, (4) very broad, soft, ochre-yellow. This is the oak leather or punk. In the natural cleavages of decaying wood, often many inches broad and very tough.

papyraceum, white, thin, paper-like. Called paper-punk as well as the hydnum chrysorhizum, and may be the same plant. Grows between the cleavages of dry wood. Himantia.

21—5. Ramalina. 57. 2.

homalea, frond compressed, 2-edged, smooth, naked, ramose, becoming pale-white, sub-ramose, crosswise: branches dichotomous attenuated: receptacles scattered, affixed at the centre, a little concave, somewhat margined, uniform-coloured.

polymorpha, frond flat-compressed or teretish, torn-branched, pale, longitudinally lacunose: fruit-dots scattered, sub-eliptic and terminal, head-form: receptacles sub-marginal, a little concave; disk fleshy, somewhat hoary. On rocks and stones.

fraxinea, frond flat, linear-laciniate, white-cinereous, glabrous both sides, rugose-lacunose, sub-reticulate: extreme divisions lance-attenuated: receptacles marginal, flat, pale-flesh-coloured. On trunks and branches of trees, chiefly ash and oak.

fastigiata, frond terete-sub-compressed, smooth, lacunose, ramose, white-glaucous: branches thickening upwards, fastigiate: receptacles terminal, peltate-sub-sessile, white. On trunks of trees.

farinacea, frond terete-compressed, glabrous, sub-lacunose, bearing fruit-dots, rigid, ramose, becoming white-cinereous; branches linear-tapering: receptacles scattered, pedicelled, flat, somewhat margined, white. On trunks and branches of trees. Collema.

12—13. Ranunculus. 26. 61.

1. *Leaves simple.*

lingualis, W. (great spear-wort. y. Ju 2f.) hairs close-pressed: leaves lanceolate, sub-denticulate, acuminate, sub-sessile: stem erect many-flowered. *S.*

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(1) Illecebrum, W. Paronychia, N. (2) Anychia, Mx. Paronychia, Ja. (3) Paronychia, N. (4) Xylostroma giganteum, Tode.

flammulus, (spear-wort. E. Ju. y. 2f.) glabrous stem declined: leaves narrow-lanceolate, acute, entire and denticulate, lower ones petioled: peduncles terminal, axillary, 1-flowered: calyx sub-reflexed. Flowers small. Damp. 1—3 f. *S.*

pusillus, Ph. (1) (y. Ju. 2f.) glabrous: leaves petioled: lower ones ovate, toothed; upper ones lance-linear, toothed at the apex, the very uppermost ones linear, bract-like: peduncles alternate, solitary, 1-flowered. 6—12 i. *S.*

filiformis, Mx. (O. w-y. J. 2f.) glabrous, small: stem filiform, creeping, geniculate, with the joints 1-flowered: flowers axillary, peduncled: leaves linear-subulate, obtuse. Var. *ovalis*, Bw. leaves oval and lanceolate: petals 5—8.

cymbalarius, (E. w-y. J. 2f.) glabrous, very small, filiform, creeping, rooting at the joints: leaves heart-reniform, crenate-dentate: peduncles radical, solitary, mostly 2-flowered: petals spatulate: fruit oblong. Onondaga.

2. *Leaves divided.*

abortivus, (2) (O. y. M. 2f.) glabrous: stem striate, naked below: radical leaves heart-reniform, obtusely crenate; cauline ones petioled, ternate, angled; upper ones sessile: branches about 3-flowered. Var. *sessilis*, (3) has sessile, cauline leaves, and glabrous shining seeds. 9—15 i. *S.*

sceleratus, (celery crowfoot. O. y. J. 2f.) glabrous: lower leaves palmate; upper ones sessile, digitate: fruit oblong. Wet. 12—18 i. *S.*

auricomus, W. (y. M. 2f.) pubescent: radical leaves reniform, 3-parted, gash-crenate; cauline ones sessile, digitate, linear: stem many-flowered: calyx coloured, spreading.

pygmaeus, Ph. (E. y. J. 2f.) small, glabrous: radical leaves sub-cordate-reniform, gash-toothed; cauline ones sessile, digitate; divisions linear, very entire: stem few-flowered: petals oblong, equal to the calyx. Labrador.

pennsylvanicus, (E. y. Ju. 2f.) stem pilose, erect, branching: leaves ternate, 3-cleft, gashed, hairy beneath: peduncles terete: calyx reflexed: petals about equalling the calyx: styles of the fruit straight. 1—2 f. *S.*

fascicularis, M. (O. y. M. 2f.) leaves sub-pubescent, radical ones long-peduncled, ternate or sub-pinnate; leafets 3-lobed, the terminal one deeply 3-cleft. calyx spreading, hairy underneath: petals longer than the calyx: root fascicled. 6—10 i. *S.*

bulbosus, (E. y. M. 2f.) very hirsute: leaves ternate, 3-cleft, gashed and toothed: stem erect, many-flowered: peduncles sulcate: calyx reflexed: root bulbous: seeds smooth. 1—2 f.

hirsutus, C. (4) (E. y. Ju. 2f.) hirsute: leaves ternate, gash-lobed: stem erect, many-flowered: peduncles sulcate: calyx reflexed, acuminate: fruit globose: seeds tubercled: root fibrous. Damp.

repens, (O. y. M. 2f.) pubescent: leaves ternate, 3-cleft, gashed; creeping shoots sent off in the summer: peduncles furrowed: calyx spreading. Damp.

prostratus, Lk. (E. y. M. 2f.) leaves ternate, 3-cleft, hairy, hairs close-pressed; extreme upper leafets lanceolate: stem entirely prostrate, creeping, zigzag: petals obovate, sub-retuse: calyx caducous; seed compressed, margined; beak hooked. Flowers large, resembling those of the repens. In Oneida county, between Rome and Oriskany, near the Erie canal, patches of ground, several yards in extent, are often covered with this species. The flowers are rarely elevated more than 8 or 10 inches above the ground, though the stem creeps more than a yard from the root.

acris, (crowfoot, butter cup. O. y. M. 2f.) hairs close-pressed: leaves 3-parted, many-cleft; upper ones linear: peduncles terete: calyx spreading. 1—2 f.

lanuginosus, W. (y. J. 2f.) hirsute: leaves 3-cleft, lobed, toothed, all over silky: peduncles elongated, terete, calyx spreading. *S.*

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(1) flamula, Wr. (2) nitidus, Pt. (3) nitidus of Ph. but he says it may be a variety of the abortivus. (4) philonitis, W.

caryiandicus, Lk. (w-y. M. 2f.) pubescent: stem simple, sub-naked: radical leaves ternate; leafets 3-lobed; lobes acute, gashed: calyx reflexed. *S.*

recurvatus, Lk. (y-w. J. 2f.) pubescent: leaves 3-lobed, wedge-form at the base, gashed at the apex, acute: stem many-flowered: calyx and corol recurved: petals linear. Flowers small. 1—2 f. *S.*

hispidus, Mx. (P. w-y. J. 2f.) very hirsute, erect, somewhat branching: leaves ternate; leafets acutely lobed: stem few-flowered: calyx close-pressed. 1 f. *S.*

aquatilis, W. (1) (w. Ju. 2f.) submersed leaves capillary; emersed ones peltate.

fluviatilis, W. (2) (river crowfoot. O. w-y. M. 2f.) stem submersed: leaves all capillary, dichotomous. The whole under water, excepting the fructification, while the corol is expanded. *S.*

multifidus, Ph. (W. y. 2f.) leaves 3-parted, many-cleft; divisions gashed, approximate: stem swimming; leafets of the calyx roundish, a little shorter than the petals. Upper Louisiana. *S.*

lacustris, Beck & Tracy. (3) (lake crowfoot. O. y. M. 2f.) leaves all submersed, alternate, dichotomously divided into numerous capillary segments, with clasping membranaceous stipules: peduncles emerging, dichotomous, slightly furrowed: flowers terminal, large: calyx spreading, hairy, fleshy, caducous: petals 5 to 8, obovate, larger than the leaves of the calyx: nectary petal-like, cuculate tubular, nearly equalling the length of the filament: stem rooting at the lower joints, hollow, branched, glabrous, floating: root fibrous. 2—5 f.

nivalis, W. (A.) leaves 5-lobed, very entire; cauline ones sessile, digitate: stem 1-flowered.

lapponicus, (A.) leaves 3-parted, lobed, obtuse: stem nearly naked, 1-flowered.

hyperboreus, Rott. (A.) leaves deeply 3-lobed; lobes oblong, divaricate: stem filiform, creeping.

Southern.

hederaceus, (E. W. Ju. 2f.) stem creeping: leaves sub-reniform, about 3—5-lobed; lobes broad, entire, very obtuse: petals oblong, scarcely longer than the calyx: stamens 5—12: seeds glabrous. Probably introduced.

oblongifolius, E. (E. y. J. 2f) .leaves petioled, denticulate; lower ones oblong-oval; upper ones lance-linear: stems branching: petals a little longer than the calyx: seeds globose, unarmed, smooth. 1—2 f.

nitidus, M. (4) (E. y. Ap. 2f.) leaves 3-parted; segments unequally 3-cleft, lanceolate, gashed, toothed, glabrous: calyx reflexed: petals oval, twice as long as the calyx: seed with a hooked beak. Procumbent and erect. 1—2f.

palmatus, E. (E. y. M.) pilose; hairs close-pressed: leaves petioled; radical ones palmate—3-parted; lobes dentate; upper ones 3-cleft or entire: seeds margined, with the point straight. 12—18 i.

carolinianus, Dc. (E. y.) stem erect, branched, and with the petioles appressed-pubescent: leaves glabrous, 3-cleft or 5-lobed; lobes ovate, somewhat gashed, toothed: calyx glabrous, reflected, a little shorter than the petals.

trachysperma, E. (E. y. M.) stem, petioles and leaves villous, with the hair

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(1) heretophyllus, Roth. (2) pantothrix, Dc.

(3) multifidus, Bw. 2d Ed. Dr. Bigelow is justly esteemed a very accurate botanist; but he seems to have overlooked some facts in regard to the naming of this plant. Smith published an Egyptian plant under the name *multifidus*, found by Forskoehl in 1814. The same year Pursh published another plant under the same name, and Bigelow published our plant under the name *fluviatilis*. In 1822 I published the *lacustris* in the name of Beck and Tracy, who convinced me, that it was neither the *multifidus* nor *fluviatilis*. In 1824 De Candolle decided that Smith's *multifidus* and that of Pursh are different plants. It is therefore proper to continue this name, at least for the present.

(4) not Wr.

spreading: leaves 3-cleft; lobes acutely gashed: peduncles short, opposite the leaves: seed tubercled, with the point hooked. 12—15 i.

muricatus, Dc. (E. y. Ap. ☼.) leaves glabrous, petioled, roundish, 3-lobed, coarsely toothed: stem erect or diffuse: peduncles opposite the leaves: calyx spreading: seeds rough-tubercled on both sides, with a straight acuminate point. 12—18 i.

tomentosus, Lk. (E. y. 2[.) stem ascending, 1—2-flowered, very villose, hairs spreading: leaves petioled, tomentose, 3-cleft; upper ones sessile, ovate, entire: calyx very villose, sub-reflexed.

septentrionalis, Lk. (y. 2[.) nearly glabrous: leaves membranaceous, glabrous, ternate; leafets somewhat 3-lobed, gashed, acute: stem and petioles hirsute at the base: peduncles about 2-flowered: calyx reflexed.

echinatus, Vent. (E. y.) a little glabrous, simple: leaves simple, roundish, 3-lobed: petals twice as long as the calyx.

collinus, Br. (1) (W. Ap.) leaves all radical, pubescent, petioled, 3—5-cleft: scape villose, 1-flowered, longer than the leaves: calyx persistent: petals oblong-ovate. 1—2 i. Hydropeltis.

14—2. RAPHANUS. 39. 63.

Exotic.

raphanistrum, (wild raddish, charlock. y. Au.) leaves lyrate: siliques terete, jointed, smooth, 1-celled. Before the silique is mature, it is generally 2-celled and not jointed. Naturalized.

sativus, (garden raddish. w. J. ☼.) leaves lyrate: silique terete, torose, 2-celled. There are several varieties of this species—one has a fusiform, another a globose, another a black root. Sinapis.

12—3. RESEDA. 54. 64.

[Generic description is here given, it having been omitted at p. 47. It should follow Hypericum; under the word *Exotic.*]

Calyx 1-leaved, 4—6-parted: petals in many divisions: capsule 1-celled, dehiscent at the top: seed reniform: (stamens 11—15: styles 3, 5, or none.)

Exotic.

odorata, (mignonette. w-y. Ju. ☼.) leaves entire and 3-lobed: calyx equalling the corol.

luteola, (dyer's weed. y. Au. ☼.) leaves lanceolate, undulate, entire, a tooth on each side of the base: calyx 4-cleft: flowers spiked. Naturalized. Nigella.

5—1. RHAMNUS. 43. 95.

franguloides, Mx. (2) dwarf alder. O. w-g. M. ♄.) unarmed: leaves oval, acuminate, serrulate, pubescent at the nerves beneath: peduncles aggregate, 1-flowered: calyx acute: fruit turbinate. Berries black. Pursh calls this the franguloides, after Mx. and gives alnifolius to a species found up the Missouri. *S.*

catharticus, (buckthorn. E. ♄.) thorns terminal: flowers 4-cleft, dioecious: leaves ovate, serrate. First found in the Highlands by Dr. Barratt.

Southern.

alnifolius, Ph. (3) (W. M. ♄.) unarmed: leaves oval, denticulate, short-acuminate, with a sinus at the base, slightly cordate, pubescent at the nerves beneath: peduncles twice 2-cleft: berries depressed-globose. Berries purple, edible.

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(1) This is a description, given by Prof. L. C. Beck, of a plant found by him in wet prairies in Illinois: but he does not decide whether it is the collinus or not. (2) alnifolius, W. (3) not W.

carolinianus, W. (O. J. ♄.) unarmed : leaves alternate, oval-oblong, sub-entire, ribbed, glabrous : umbels peduncled : flowers all fertile. Berry black, globose. 4—6 f.

lanceolatus, Ph. (W. ♄.) unarmed, shrubby : leaves lanceolate, serrulate, acute at each end, pubescent beneath. Berries black.

minutiflorus, Mx. (L. Oc. ♄.) unarmed : leaves nearly opposite, oval, serrulate : flowers very minute, divisions spiked, alternately sessile on the rachis : style 3-cleft : berry 3-seeded. Vitis.

9—3. RHEUM. 12. 28.

Exotic.

palmatum, (rhubarb. J. 2f.) leaves palmate, acuminate. From China.

rhaponticum, (1) (pie rhubarb. w. J. 2f.) leaves heart-ovate, obtuse and acute, smooth ; veins sub-pilose beneath, the sinus at the base dilated : petioles furrowed on the upper side, rounded at the edge. Radical leaves very large. 2—4 f. Cassia.

8—1. RHEXIA. 17. 90.

virginica, (meadow beauty, deer-grass. E. p. Ju. 2f.) stem wing-angled : leaves sessile, lance-ovate, ciliate-serrate : corymbs dichotomous. 1—2 f. *S.*

mariana, Mx. (w-r. Ju. 2f.) stem and leaves very hirsute : leaves sub-petioled, lance-oval or lance-linear : calyx smoothish, tubular, long. Var. *purpurea*, leaves narrow-lanceolate or oblong : flowers deep purple. Var. *rubella*, leaves lance-oval or oblong : flowers pale, reddish. 1—2 f. *S.*

ciliosa, Mx. (E. p. Ju. 2f.) stem sub-quarangular, glabrous : leaves sub-petioled, lance-ovate, serrulate, ciliate, glabrous beneath, somewhat hispid above : flowers involucred. 18 i. *S.*

Southern.

serrulata, N. (E. p. 2f.) stem sub-quadrangular, smooth : leaves small, sub-petioled, roundish-oval, acute, smooth on both sides, margin serrulate, base sub-ciliate : flowers peduncled, about in threes : calyx glandular-hirsute. 6—10 i.

glabella, Mx. (2) (E. p.) glabrous : stem terete : leaves lanceolate and ovate, 3-nerved, denticulate, slightly glaucous : calyx glutinous. 2—3 f.

stricta, Ph. (E. p. J. 2f.) stem straight, erect, winged, glabrous, bearded at the joints : leaves sessile, narrow-lanceolate, acuminate, 3-nerved, glabrous on both sides : corymbs dichotomous.

lutea, Wr. (E. Ju. y. ☼.) hirsute : leaves lance-linear, sometimes wedge-form at the base, 3-nerved : panicle pyramidal : anthers erect. 18 i.

linearifolia, Lk. (E. y.) stem terete, sub-pubescent : leaves alternate, linear, oblong, obtuse, sessile, pubescent on both sides : flowers sub-solitary.

angustifolia, E. (3) (E. w. Ju. 2f.) hirsute : leaves linear, and lance-linear, somewhat clustered : root creeping? Oenothera.

13—2. RHINANTHUS. 40. 35.

crista-galli, W. (yellow rattle, yellow coxcomb. E. y. J. ☼.) upper lip of the corol vaulted : calyx smooth : leaves lanceolate, serrate. 1 f. Melampyrum.

21—5. RHIZOMORPHA. 57. 2.

sub-corticalis, frond compressed, dark-fuscous, shining : branches scattered,

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(1) tartaricum of former Eds. but Darlington has shewn that it is this species. (2) alifanus, Wr. (3) mariana, var. exalbida, Mx.

reticulate, with anastomoses (meeting and joining of mouths :) receptacles conglomerate. On dead trunks of trees.

subterranea, frond terete, glabrous, black, very branching ; branches and branchlets crowded, attenuated, free. On stones and decaying wood.

setiformis, frond terete, very slender, black, shining, simple : apex divided. On fallen leaves.

cornicularioides, frond and branches a little terete, flexuous, interwoven, widely spreading, dark, opake, very tender. On the earth. Alectoria.

10—1. RHODODENDRON. 18. 50.

maximum, (wild rosebay. E. r. Ju. ♄.) leaves oblong, glabrous, paler beneath : umbels terminal, dense : corols somewhat bell-form. Var. *roseum*, corol pale rose colour, divisions roundish : leaves obtuse at the base. Var. *album*, corol smaller, white, divisions oblong : leaves acute at the base. Var. *purpureum*, corol purple, divisions oblong : leaves obtuse at the base, green on both sides. 4—20 f. *S.*

lapponicum, (1) Ap. Ju. ♄.) leaves elliptical, roughened with excavated punctures. 8—10 i.

Exotic.

ponticum, rose bay. p. ♄.) leaves oblong, glabrous, both sides coloured alike : corymbs terminal : corol bell-wheel-form : petals lanceolate.

Southern.

punctatum, (E. r. Ju. ♄.) leaves lance-oval, glabrous, with resinous dots beneath : umbels terminal : corol funnel-form : capsules long. 4—6 f.

catawbiense, Mx. (E. r. J. ♄.) leaves short-oval, roundish-obtuse at each end : umbels terminal : segments of the calyx narrow-oblong : corol bell-form. 3—4 f. Monotropa.

10—1. RHODORA. 18. 50.

canadensis, (false honeysuckle, rhodora. E. b. r. M. ♄.) leaves oval, entire, glaucous-pubescent beneath : flowers in terminal umbels. 2 f. Sophora.

5—3. RHUS. 43. 94.

typhinum, (sumach. O. y. g. Ju. ♄.) branches and petioles very villose : leaves pinnate, many-paired ; leafets lance-oblong, serrate, somewhat downy beneath. Berries red and very sour. 8—15 f. *S.*

glabrum, (sleek sumach. O. g. r. Ju. ♄.) branches, petioles and leaves glabrous : leaves pinnate, many-paired ; leafets lance-oblong, serrate, whitish beneath : fruit silky. Var. *elegans*, flowers dioecious. The leaves of both the species are used for tanning morocco leather. Berries red and sour. 6—12 f. *S.*

viridiflorum, Lk. (y-g. Ju. ♄.) nearly glabrous : leaves pinnate in many pairs ; leafets lance-oblong, serrate, sub-tomentose beneath : racemes erect. Probably a variety of the last. Ph.

copallinum, (wing-rib sumach, mountain sumach. E. y-g. Ju. ♄.) leaves pinnate, with the main petiole joint-winged ; leafets lance-oval, entire : flowers dioecious. Berries red. 3—12 f. *S.*

vernix, (poison sumach, poison elder. E. y-g. Ju. ♄.) very glabrous : leaves pinnate, many-paired ; leafets oval, abruptly acuminate, entire : panicle lax, dioecious : fruit glabrous. Berries green, at length whitish. Panicle few-flowered compared with the preceding species. Very poisonous. 8—15 f. *S.*

toxicodendron, (poison vine, poison ash. O. g. Ju. ♄.) rooting : leaves ternate ; leafets oval, entire or sinuate-crenate : racemes on the branches and

(1) Azalea, L.

axillary, sessile, dioecious. Var. *radicans*, (1) (poison ivy) stem climbing and rooting: leafets broad, entire, or with scattered teeth. Var. *quercifolium*, (poison oak) erect, low: leafets variously sinuate-lobed. Var. *microcarpon*, leafets oblong-oval, long-acuminate, sub-rhombic: fruit very small. The sap of this species is an excellent marking ink for linen.

aromaticum, A. (E. y. M. ♄.) flowers amentaceous: leaves ternate; leafets rhombic-oval, toothed, sessile, pubescent beneath. Dioecious. Small shrub. *S.*

Exotic.

cotinus, (false fringe-tree, aaron's beard. p-g. Ju. ♄.) leaves simple, obovate and ovate: panicle racemes plumose. A small tree, with very minute flowers supported on capillary, downy, or hairy peduncles. Indigenous to Siberia, Austria and Lombardy.

Southern.

pumilum, Mx. (E. Ju. ♄.) low: branches and petioles pubescent: leafets oval, gash-toothed, tomentose beneath: fruit silky and downy. Poisonous. 1 *f.* Staphylea.

3—1. RHYNCHOSPORA. (7) 3. 9.

alba, (E. Ju. 2ℓ.) spike corymb-fasicled: culm triangular above: leaves setaceous: seed somewhat lenticular: bristles about 10. 12—18 *i.* *S.*

fusca, M. (2) (E.) culm 3-angled: leaves linear, carinate: fascicles of spikes alternate, peduncled: spikes ovate: glumes ovate, brown: seed ovate with an acute black tubercle. 2 *f.*

glomerata, (3) (E. J. 2ℓ.) spikes corymb-fascicled, remote, in pairs: culm obtusely triangular: leaves flat: seed obovate-wedge-form, very smooth, as long as the tubercle. 12—18 *i.* *S.*

capillacea, T. (E. Ju.) spikes 3—5, nearly terminal: culm 3-angled, somewhat leafy: leaves setaceous: seed stiped, sub-rugose.

sparsa, Mx. (Ju.) culm 3-angled, leafy: corymbs axillary and terminal, compound, lax: peduncles capillary: seed obovate, rugose, much longer than the tubercle. 18 *i.* *S.*

cymosa, W. (4) (E. Ju.) culm 3-angled, leafy: cymes terminal and axillary; terminal one largest: seed round-ovate, compressed, transversely rugose: tubercle conical. 12—18 *i.* *S.*

laxa, Vahl. (5) (E.) culm 3-angled: corymbs leafy, decompound, loose: spike subulate: seed obovate, pointed with the long persistent style. 3—6 *f.* *S.*

Southern.

variflora, Mx. (6) (E. M. 2ℓ.) culm and leaves setaceous: panicles loose, few-flowered: seed obovate, rugose: bristles as long as the seed. 1 *f.*

inexpansa, Mx. (E. Ju.) culm obscurely 3-angled: panicles remote, pendulous: seed oblong, rugose: bristles scabrous, twice as long as the seed. 2 *f.*

fascicularis, Mx. (E.) flowers fascicled, lateral and terminal: bracts short: spikelets oblong: scales mucronate: bristles twice as long as the smooth seed.

distans, Mx. (E. Ju.) culm 3-angled: fascicles of flowers distant: seed lenticular, slightly furrowed: bristles setaceous. 12—20 *i.*

ciliata, Vahl. (E. 2ℓ.) spike corymb-fascicled, terminal: bracts and leaves obtusish, ciliate.

plumosa, E. (E. Ju.) culm slender, 3-angled: leaves linear: flowers terminal, crowded: bracts awned: bristles feathered. 8—12 *i.*

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(1) Made a distinct species by L. (2) alba, var. fusca, Ph. (3) capitellata, E. (4) Scirpus polyphyllus, Ph. (5) longirostris, E. (6) micrantha, Vahl. (7) Schoenus, L. Mx. W. M.

punctata, E. (E.) fascicles lateral and terminal, approximate at the summit of the culm: seeds rugose, dotted. 1—2 f.
caduca, E. (E. Ju.) culm 3-angled: panicles axillary, erect: spikelets clustered, sessile: seed lenticular, rugose: bristles twice as long as the seed.
teres, Ea. (1) (E. Ju.) culm terete: leaves linear: panicles cyme-like: flowers crowded: seed glabrous: bristles setaceous. 1—3 f. Mariscus.

5—1. Ribes. 36. 85.

1. *Currant-like. Flowers racemed.*

floridum, W. (2) (wild black currant. O. M. ♄.) unarmed: leaves punctate both sides: racemes pendant: calyx cylindric: bracts longer than the pedicels. 3—4 f. *S.*
albinervium, Mx. (A. g-y. M. ♄.) unarmed: leaves abbreviated, acutely lobed, smoothish: nerves white: racemes recurved: berry glabrous. Berries red.
trifidum, Mx. (A. y-g. M. ♄.) unarmed: leaves moderately lobed, glabrous above, pubescent beneath: racemes lax, pubescent: flowers flattish: divisions of the calyx about 3-cleft: petals spatulate, obtuse: berries hirsute. Berries red.
rigens, Mx. (A. M. ♄.) unarmed: branches straight: leaves acutely lobed and toothed, reticulate-rugose, pubescent beneath: racemes lax, becoming stiffly erect: berries sub-hispid. Berries red, erect.
glandulosum, A. (3) (E. r-y. M. ♄.) unarmed: branches reclined-prostrate: leaves lobed, smoothish; younger ones pubescent: racemes sub-erect: petals deltoid: bracts minute: berry hispid. Most of the plant, particularly the calyx, covered with glandular hairs. 2—3 f.
sanguineum, Ph. (W. r. p. Mar. ♄.) unarmed: leaves cordate, 3-lobed, serrate, with vein-like lines, glabrous above, sparingly white, tomentose beneath: racemes lax, pubescent, twice as long as the leaves: calyx tubular. petals oblong, the length of the calyx: bracts obovate-spatulate, as long as the pedicels: germs hirsute.
aureum, Ph. (W. y. Ap. ♄.) unarmed, very glabrous: leaves 3-lobed: lobes divaricate, with a few gash-teeth, shorter than the petiole: petiole ciliate at the base: racemes lax, dense-flowered: calyx tubular, longer than the pedicels; tube slender; divisions oblong, obtuse: petals linear, half as long as the divisions of the calyx: bracts linear, as long as the pedicels: berries glabrous.
laxiflorum, Ph. (W. y. ♄.) unarmed: leaves cordate, 5-lobed, gash-toothed, glabrous: petioles slender: racemes lax, erect, as long as the leaves: bracts subulate: pedicels elongated: calyx bell-tubular: berries globose, hispid.

2. *Gooseberry-like. Peduncles mostly few-flowered, rarely sub-racemed.*

hirtellum, Mx. (A. g. M. ♄.) spines small, sub-axillary: branches sub-hispid: leaves small, semi-trifid: lobes sub-dentate: peduncles 1-flowered: berry glabrous. Berries red. *S.*
gracile, Mx. (O. M. ♄.) spines small, sub-axillary: leaves petioled, slender, pubescent both sides: lobes acute, gash-toothed: peduncles capillary, about 2-flowered: calyx bell-tubular: berries glabrous. Berries bluish-purple. 2—3 f. *S.*
triflorum, W. (wild gooseberry. A. g. M. ♄.) spine sub-axillary: leaves glabrous, 3—5-lobed, gash-toothed: peduncles sub-3-flowered, with the pedi-

(1) cymosa, E. As Elliott's plant differs essentially from the cymosa of M. it becomes necessary to give it another name. (2) pennsylvanicum, Lk recunatum, Mx. (3) prostratum, Hr.

cels elongated: bracts very short: petals spatulate, undulate: style hirsute, half 2 or 3-cleft, exsert: berry glabrous. Berries pale-red. 3—4 f. *S.*

oxyacanthoides, (M. ♄.) the large sub-solitary prickles near the buds, the smaller ones scattered: leaves glabrous, with toothed lobes: peduncles short, about 2-flowered: berries glabrous. 3 f.

lacustris, P. (1) (O. g-y. M. ♄.) sub-axillary spines few: stem every where aculeate-hispid: leaves lobed beyond the middle: petioles villose: berries somewhat racemed, hispid. 3—4 f. *S.*

cynosbati, Mx. (E. g. M. ♄.) sub-axillary spines about in pairs: leaves short-lobed, gash-toothed, with soft pubescence: racemes nodding, few-flowered: calyx erect, bell-form: berry prickly. Berries dark-brown.

speciosum, Ph. (W. p. ♄.) under the buds 3-plaited-prickly: leaves wedge-roundish, gash-crenate, glabrous, nerved, paler beneath, short-petioled: peduncles about 3-flowered, longer than the leaves: pedicels and germs glandular-pilose: calyx tubular, longer than the pedicels: stamens very long, exsert.

menziesii, Ph. (W. r. p. ♄.) under the buds 3-plaited-prickly: branches very hispid: leaves truncate at the base, sub-5-lobed, gash-toothed; lateral lobes shortest, tomentose beneath: peduncles about 2-flowered, equal to the leaves: calyx tubular; limb spreading: stamens as long as the calyx: style exsert: berry globose, prickly.

Exotic.

rubrum, (currant. g. M. ♄.) unarmed: racemes glabrous, nodding: corol flat: petals obcordate: leaves obtusely 5-lobed: stem erect. Berries red. 2—4 f.

nigrum, (black currant. g. M. ♄.) unarmed: leaves punctate beneath: racemes lax: flowers bell-form: bracts shorter than the pedicels. Berries black. 3—5 f.

grossularia, (english gooseberry. g. M. ♄.) branches prickly: petioles hairy: bracts 2-leaved: berry glabrous or hirsute. 2—4 f.

uva-crispa, (smooth gooseberry. g. M. ♄.) branches prickly: berry glabrous: pedicels with 1-leaved bracts. Perhaps a variety of the grossularia.

Southern.

resinosum, Ph. (A. g. Ap. ♄.) unarmed, wholly covered with resinous glandular hairs: leaves 3—5-lobed, roundish: racemes erect: calyx flattish: petals obtuse-rhomboid: bracts linear, longer than the pedicels: berries hirsute.

viscosissimum, Ph. (W. y. J. ♄.) unarmed, wholly viscid-pilose: leaves cordate, obtusely 3-lobed, serrate: racemes erect, short: calyx tubular: petals oblong: bracts linear-spatulate, half as long as the pedicel: germs hirsute.

rotundifolium, Mx. (A. ♄.) spines sub-axillary: leaves roundish, sub-pubescent: lobes round-obtuse: peduncles 1-flowered: limb of the calyx tubular: berries glabrous. Hedera.

21—3. RICCIA. 57. 3.

natans, (floating liverwort. O. Ju.) fronds obcordate, with apexes meeting so as to form the sectors of circles, flat: radicles beneath flat. It floats on the water, with its short flat roots extending a little distance into it. Colour sea-green. Each congeries of floating fronds hardly an inch in diameter. Channels run on their backs, like midribs in leaves.

fluitans, (forkstems. O. J.) fronds repeatedly forked, linear, convex or sub-cylindric, smooth, reticulate, obtuse and cloven at the tips. Very plenty from Lake Superior to Boston in water, among lemna. It is pellucid and cellular, 2 or 3 inches long. It has nothing resembling a root; but the whole plant appears rather like the stems of some plants.

(1) oxycanthoides, Mx.

glauca, frond radiating from a centre, dichotomous, flat, reticulate.
lutescens, Sz. frond di- or trichotomous, thick at the apex, inflexed and bifid at the margin; lobes at the margin free, the middle nerve with radicals impressed above, convex beneath, substance porous, standing out from tubercles filled within with minute granulations. In dried swamps, forming yellow patches two inches in diameter. On the earth, largish, orbicular and confluent. Blasia.

19—15. RICINUS. 38. 96.

Exotic.

communis, (castor-oil plant, palma christi. ☼.) leaves peltate, palmate: lobes lanceolate, serrate: stem with hoary mealiness. 4—6 f. Jatropha.

4—1. RIVINA. 12. 29.

laevis, (E.) racemes simple: leaves ovate, acuminate, glabrous, flat: stem terete. Resembles Phytolacca decandra. *S.*

Southern.

humilis, P. (E. ♄.) racemes simple: flowers tetandrous: leaves pubescent. Alchemilla.

16—10. ROBINIA. 32. 93.

pseudo-acacia, (locust tree, false acacia. A. w. M. ♄.) leaves pinnate, with a terminal leafet: stipules thorny, or a thorn: racemes pendant: teeth of the calyx unawned: legumes smooth. 30—40 f. *S.*

Southern.

viscosa, (1) (clammy locust. A. Ju. ♄.) racemes with 1-flowered pedicels: leaves pinnate, with a terminal leafet: branches and legumes with viscous glands: calyx acuminate. Racemes axillary, dense-flowered, erect: flowers approaching from white to red. Cultivated.
hispida, (2) (rose locust. A. Ap. r. ♄.) racemes axillary, sub-erect: calyx acuminate: stem mostly unarmed; most of the plant hispid: leaves pinnate, with a terminal leafet; leafets round-oval, mucronate, sometimes alternate. Var. *rosea*, branchlets nearly glabrous. Cultivated. S—6 f. Astragalus.

5—1. ROCHELIA. (3) 41. 42.

virginiana, (O. w-b. J. ☼.) pilose: leaves lance-oblong, acuminate, scabrous above: racemes divaricate: seeds densely covered with hooked bristles. 2 f. *S.*
lappula, (O. b. Ju. ☼.) hispid: seeds prickly, bearded: leaves linear-oblong: stem branched above: corol longer than the calyx. 12—18 i.

Southern.

glomerata, N. (4) (W. w. J. ♂.) hirsute: seeds rugose: leaves linear-spatulate: spikes peduncled, axillary, conglomerate, bifid; upper ones sessile: divisions of the corol entire. 6—12 i. Borago.

11—13. ROSA. 35. 93.

blanda, W. (E. Ju. ♄.) germs globose, and with the peduncles hispid: leafets (7,) oblong, sub-equally serrate, glabrous: petioles glabrous, somewhat prickly: branches very hispid-aculeate.
parviflora, W. (5) (wild rose. O. r. w. ♄.) germs depressed-globose: germs

(1) glutinosa, C. (2) montana, Bartram. rosea, Du Hamel. (3) Myosotis, L. (4) Cynoglossum, Ph. Myosotis, N. (5) carolina, Mx.

and peduncles hispid: petioles pubescent, sub-aculeate: stem glabrous: prickles stipular, straight: leafets lance-oval, simply serrate, glabrous: flowers somewhat in pairs. Very variable. 1—3 f. *S.*

nitida, W. (r. Ju. ♄.) germs globose: calyx, peduncles and branches hispid: petioles sub-pilose, unarmed: leafets (7,) lance-oblong, both sides very glabrous and shining. *S.*

lucida, Eh. (E. r. Ju. ♄.) germs depressed-globose: germs and peduncles subhisped: petioles glabrous, sub-aculeate: stem glabrous: prickles stipular, straight: leafets lance-ovate, obtusish, coarsely serrate, glabrous, shining: flowers somewhat in pairs: divisions of the calyx entire. 4—6 f. *S.*

gemella, W. (E. r. Ju. ♄.) germs depressed-globose: germs and peduncles glabrous: flowers somewhat in pairs: leaves oblong, acute, opake: petioles and veins pubescent beneath: prickles uncinate, the cauline ones in pairs below the axils.

carolina, (1) (swamp rose. O. r-w. Ju. ♄.) germs globose: germs and peduncles a little hispid, or glabrous: petioles hairy, and a little prickly: stem glabrous: prickles stipular, sub-uncinate: leafets 5 or 7, lance-oblong, acute, sharply serrate, glaucous beneath: flowers solitary or corymbed. 3—6 f.

rubifolia, Br. (W. r. Ju. ♄.) germs sub-globose: germs and peduncles glandular-hispid: stem smooth: prickles short, solitary, uncinate: leaves petioled, ternate; leafets ovate, acute, serrate, glabrous above, white-downy beneath: divisions of the calyx viscid-pilose: flowers corymbed. 6—8 f. *S.*

rubiginosa, (2) (sweet-briar. E. r. J. ♄.) germ ovate: peduncles and petioles glandular-hispid; petioles somewhat prickly: stem glabrous: prickles scattered, hooked, slender: leafets (5 or 7,) ovate, serrate, sub-glandular beneath. 3—4 f. *S.*

micrantha, S. (E. r-w. J. ♄.) germs ovate: germs and peduncles somewhat hispid: prickles hooked: leafets ovate, acute, with reddish glands beneath. Resembles the last in the odour of its leaves. 4—8 f.

sayi, Sz. (W. ♄.) germ oblong-ovate, smooth: divisions of the calyx persistent, erect, spreading at the summit, villous, longer than the germ: peduncles rigid, smooth or sub-glandular-hispid: petioles villous and prickly underneath: leafets (7,) ovate, sessile, deeply serrate, smooth above, glaucous-villose beneath: stipules clasping glandular-villose: younger branches aculeate hispid.

Exotic.

canina, (dog rose. ♄.) germs ovate: germs and peduncles glabrous: stem and petioles prickly: leaves ovate, glabrous.

gallica, (french rose, common rose. r. J. ♄.) germs ovate: germs and peduncles hispid: stem and petioles hispid-prickly. Sometimes the colours are variegated.

damascena, (damask rose. w. r. J. ♄.) calyx half-pinnate: germ ovate, turgid, (thickened near its top,) bristly: stem and petioles prickly: leafets ovate, pointed, downy beneath.

muscosa, (moss rose. r. Au. ♄.) germs ovate: calyx, peduncles, petioles and branches hispid, glandular-viscid, (mossy-like:) spines of the branches scattered, straight.

moschata, (musk rose. ♄.) germs ovate: germs and peduncles villose: stem and petioles prickly: leafets oblong, acuminate, glabrous: panicle many-flowered.

burgundiaca, (burgundy rose. ♄.) germs sub-globose: germs and peduncles hispid: leafets ovate, pubescent beneath: corol small, full, fleshy-white; disk obscure. Var. *provincialis*, has scattered reflexed prickles on the branches, and glandular serratures.

semperflorens, (monthly rose. ♄.) germs ovate-oblong, tapering to both ends:

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(1) pennsylvanica, Mx. corymbosa, Eh. (2) suaveolens, Ph.

germs and peduncles hispid : stem prickly : flowers in erect corymbs. Resembles damascena.

alba, (white rose. w. J. ♄.) germs ovate, glabrous or hispid : stem and petioles prickly : leafets ovate, villose beneath.

pimpinellifolia, (burnet rose. r. ♄.) germs globose : germs and peduncles glabrous : stem with scattered straight prickles : leaves obtuse : petioles scabrous. Very small.

centifolia, (hundred-leaved rose. r. ♄.) germs ovate : germs and peduncles hispid : stem hispid, prickly : leaves pubescent beneath : petioles unarmed.

cinnamomea, (cinnamon rose. ♄.) germs globose : germs and peduncles glabrous : stem with stipular prickles : petioles somewhat unarmed : leafets oblong. R. majalis. Stem brown-cinnamon colour.

multiflora, (japan rose. ♄.) germs ovate : germs and peduncles unarmed, villose : stem and petioles prickly. Branches generally purple : leafets ovate : flowers small, panicled.

spinosissima, (scotch rose. ♄.) germs globose, glabrous : peduncles hispid : stem and petioles very hispid. Var. *scotica*, is smaller.

parvifolia, (small-leaf rose. ♄.) small : germs ovate, sub-glabrous : peduncles glandular : stem and petioles with slender prickles : leafets rugose, a little villose beneath, ovate, glandular-serrate.

Southern.

setigera, Mx. (E. J. ♄.) germs globose : petioles and veins prickly : branches glabrous : prickles in pairs and scattered : leafets 3—5, acuminate glabrous : leafets of the calyx fringed with bristles. 5—8 f.

lutescens, Ph. (E. y-w. J. ♄.) germ globose : germs and peduncles glabrous : branches hispid-spiny : leafets (7,) glabrous, oval, acuminate-serrate : petioles unarmed : flowers solitary : divisions of the calyx lanceolate, cuspidate : petals oval, very obtuse.

laevigata, Mx. (cherokee rose. E. w. Ap. ♄.) germ oblong, hispid : leaves perennial, ternate ; leafets lanceolate, serrate, coriaceous, lucid : flowers solitary, terminal. 5—20 f.

lyonii, Ph. (W. r. Ju. ♄.) germs sub-globose, nearly glabrous : peduncles hispid : petioles somewhat prickly : stem glabrous : prickles scattered, straight : leafets (3—5,) ovate-oblong, acute, serrate, sub-glabrous above, tomentose beneath ; upper ones simple : flowers somewhat in threes : stipules linear : divisions of the calyx tomentose, linear, scarcely gashed.

pendulina, W. (thornless rose. r. J. ♄.) unarmed : germs oblong : peduncles and petioles hispid : stem and branches glabrous : fruit pendant. Cultivated. Rubus.

2—1. ROSMARINUS. 42. 39.

Exotic.

officinalis, (rosemary. ♄.) leaves, some green both sides ; others whitish beneath, linear : margins revolute. Circaea.

3—2. ROTTBOELLIA. 4. 10.

Southern.

dimidiata, Mx. ? (E. L. ♃.) spike compressed, linear : flowers secund : calyx 2-valved, 2-flowered : outer floret staminate ; inner one perfect.

ciliata, N. (L.) culm erect, tall : spikes terete, long-peduncled : flowers pedicelled, secund : pedicels and margins of the rachis villose : calyx and corol each 2-valved. 3—4 f.

rugosa, N. (L.) culm erect, leafy : spikes cylindric, solitary, axillary, proximate : joints of the rachis smooth, nearly semi-cylindric, tumid : outer valve of the perfect flower transversely rugose ; accessary flower mostly barren with an emarginate pedicel. Pleuraphis.

4—1. Rubia. 47. 57.

Exotic.

tinctoria, (madder.) leaves lanceolate, about in sixes: stem prickly, climbing. Var. *sylvestris*, lower leaves in sixes, upper ones in fours or in pairs.

Southern.

brownei, Mx. (E. y. 2f.) hispid: leaves in fours, oval: peduncles solitary, 1-flowered: stem decumbent. Berries purple, smooth. Ph. Cornus.

11—13. Rubus. 35. 92.

idæus, (garden raspberry. E. w. M. ♄.) leaves quinate-pinnate and ternate; leafets rhomb-ovate, acuminate, downy beneath: petioles channelled: stem prickly, hispid flowers sub-panicled. Var. *americanus*, branchlets nearly glabrous: stem and petioles terete: leaves all ternate: pedicels somewhat prickly. 4—6 f. *S.*

villosus, (high blackberry. O. w. J. ♄.) pubescent, hispid and prickly: leaves digitate, in threes or fives; leafets ovate, acuminate, serrate, hairy both sides: stem and petioles prickly: calyx short, acuminate: racemes naked: petals lance-ovate. 4—6 f. *S.*

frondosus, Bw. (E. J. 2f.) stem prickly, erect: leaves ternate or quinate, pubescens simple: racemes leafy: petals orbicular. 3—6 f.

strigosus, Mx. (1) (red raspberry. O. w. J. ♄.) unarmed, rigidly hispid: leafets 3, or pinnate-quinate, oval, at the base obtuse, acuminate, marked with lines, and white-downy beneath, terminal one often sub-cordate. Fruit red, sweet.

setosus, Bw. (E. w. J. 2f.) stem erect, reclining, rigidly-hispid: leaves ternate or quinate, smooth and green on both sides.

cuneifolius, Ph. (E. w. J. ♄.) branches, petioles and peduncles downy, with recurved prickles: leaves digitate, in threes or fives: leafets wedge-obovate, unequally toothed above, plaited, downy beneath: racemes terminal, panicled: pedicels 1-flowered. 2 f. *S.*

canadensis, (E. J. ♄.) a little glabrous: leaves digitate, in tens, fives and threes: leafets lanceolate, naked both sides, sharply serrate: stem unarmed: bracts lanceolate. Stem purple.

occidentalis, (black raspberry. O. w. g. ♄.) branches and petioles glaucous and prickly: leaves ternate, oval, acuminate, sub-lobate and doubly serrate, white-downy beneath: petioles terete: prickles recurved. 4—8 f. *S.*

hispidus, (E. w. J. ♄.) sarmentose-procumbent: stem, petioles and peduncles very hispid, with rigid bristles: leaves ternate, gash-serrate, naked, middle one peduncled.

trivialis, Mx. (2) (creeping blackberry, dew-berry. O. w. J. ♄.) sarmentose-procumbent: petioles and peduncles aculeate-hispid, with the prickles recurved: stipules subulate: leaves ternate or quinate, oblong-oval, acute, unequally serrate, sub-pubescent: pedicels solitary, elongated. Var. *flagellaris*, has orbicular petals, and small smooth leaves. *S.*

inermis, W. (♄.) stem, petioles and peduncles unarmed: leaves ternate, ovate, acute, unequally serrate, tomentose beneath; lateral leafets somewhat gashed: stipules setaceous- subulate.

spectabilis, Ph. (W. M. ♄.) unarmed, glabrous: leaves ternate, ovate, acute, unequally and doubly serrate, pubescent beneath: peduncles terminal, 1-flowered, solitary: petals ovate.

odoratus, Mx. (flowering raspberry. E. r. J. ♄.) unarmed, erect, viscid-hispid: leaves simple, acutely 3 or 5-lobed: corymbs terminal, spreading. Flowers large: berries rather dry and thin. 3—6 f. *S.*

saxatilis, (brier herb, rock blackberry. O. w. J. 2f.) herbaceous, pubescent.

(1) pennsylvanicus, Lk. (2) procumbens, M.

stem creeping : leaves ternate, rhombic, acute, gash-toothed, naked ; terminal one petioled : flowers somewhat in threes : peduncles elongated. *S.*

obovalis, Mx. (E. M. 2f.) stem becoming a little woody, hispid, with stiff hairs : leaves ternate, round-obovate, serrate, naked : stipules setaceous : racemes sub-corymbed, few-flowered : bracts ovate : pedicels elongated. 2—4 f. *S.*

sempervirens, Bw. (E. w. J. ♄.) stem procumbent, covered with minute prickles : leaves ternate, obovate, serrate, shining, evergreen.

arcticus, W. (E. r. J. 2f.) herbaceous, small : stem unarmed, about 1-flowered : leaves ternate, glabrous, obtusely serrate : petals roundish, emarginate. Labrador.

acaulis, Mx. (1) (W. Ju. 2f.) herbaceous, small : stem unarmed, 1-flowered : leaves ternate, glabrous, sharply serrate : petals oblong, entire : styles approximate.

stellatus, W. (W. p. 2f.) herbaceous, small : stem unarmed, erect, 1-flowered : leaves simple, cordate, 3-lobed, rugose-veined : petals lanceolate.

pedatus, S. (W. w.? 2f.) herbaceous, small, creeping : leaves pedate-quinate, gashed : peduncles filiform, bracted in the middle : calyx nearly glabrous, reflexed.

chamæmorus, (cloud-berry. A. w. J. 2f.) herbaceous, small : stem unarmed, 1-flowered, erect : leaves simple, sub-reniform, round-lobed : petals oblong.

parviflorus, N. (W. w. ♄.) shrubby, unarmed : leaves simple, palmate-lobed : peduncles 2 or 3-flowered : flowers small : segments of the calyx villose, ovate, abruptly acuminate : petals oblong-ovate.

deliciosus, T. & J. (W. p. ♄.) stem fruticose, very branching, unarmed : branches and petioles pubescent : leaves simple, round-cordate, shortly 3—5-lobed, villose-pubescent, rugose : bracts lanceolate, 1-toothed : flowers sub-corymbed, terminal : divisions of the calyx ovate-oblong, acuminate, leafy at the apex, shorter than the petals. Dalibarda.

17—3. RUDBECKIA. 49. 55.

purpurea, W. (A. p. Ju. 2f.) rough : lower leaves broad-ovate, tapering to the base, remotely toothed ; cauline leaves lance-ovate, acuminate at both ends, sub-entire : rays long, pendant, 2-cleft. 3—5 f. *S.*

discolor, Ph. (W. y. & p. Au. 2f.) branches corymbed, 1-flowered : peduncles naked, elongated : leaves lanceolate, strigose-pilose : scales of the calyx ovate, acute : petals lanceolate, entire, two-coloured, as long as the calyx. 2 f. *S.*

fulgida, (A. p. Au. 2f.) stem hispid : branches wand-like, elongated, 1-flowered : leaves lance-oblong, denticulate, hispid, narrow at the base, sub-cordate : calyx leafy, about equalling the ray : disk hemispheric, with lanceolate chaff. 2—3 f. *S.*

hirta, (y. & p. Ju. 2f.) very hirsute : stem wand-like, sub-ramose, 1-flowered : peduncles naked : leaves ovate-spatulate, 3-nerved, serrate, rough-haired : scales of the calyx imbricate in a triple series, shorter than the ray : chaff oblong, acute. 2—3 f. *S.*

triloba, (A. y. & p. Au. 2f.) pilose-hispid : stem panicled : branches divaricate, many-flowered, leafy : leaves lanceolate, acuminate at both ends, serrate ; lower ones 3-lobed : leafets of the calyx linear, deflexed. 4—5 f. *S.*

laciniata, (cone-flower, cone-disk sunflower. O. y. Au. 2f.) lower leaves pinnate ; leafets 3-lobed ; upper ones ovate : egret crenate : stem glabrous. Damp. 5—10 f. *S.*

digitata, (y. Au. 2f.) lower leaves pinnate ; leafets pinnatifid ; upper ones simply pinnate ; top ones 3-cleft : egret crenate : stem smooth. 4—8 f. *S.*

pinnata, Mx. (2) (y. & p. Ju. 2f.) leaves all pinnate ; one or more of the lower leafets 2-parted, the rest undivided : egret entire : stem furrowed, hispid.

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(1) pistillatus, S. (2) digitata, W. odorata, S.

Southern.

amplexifolia, W. (W. y. Au. ☼.) glabrous: leaves lance-oblong, cordate, clasping; lower ones serrate: disk cylindric-conical.

laevigata, Ph. (E. y. 2f.) very glabrous: leaves lance-ovate, acuminate at each end, 3-nerved, sparingly toothed: scales of the calyx lanceolate, as long as the ray.

spathulata, W. (A. Au. ♂.) slender pubescent: stem 1-flowered: leaves obovate spathulate, entire: calyx spreading, imbricate: ray florets 3-toothed.

aristata, Ph. (E. y.) stem hispid: branches long, corymbed, 1-flowered: leaves lance-oblong, serrate, hispid: disk sub-hemispheric: chaff of the egret subulate, awned. Does this belong to this genus? Elliott.

radula, Ph. (1) (E. ♂.) stem hispid below, nakedish and glabrous above: peduncles very long, 1-flowered: leaves ovate, attenuate, tuberculate-hispid: calyx imbricate; scales ovate, acuminate, ciliate.

subtomentosa, Ph. (A. Au. 2f.) short pubescent, sub-tomentose: branches erect, many-flowered: leaves lance-oblong, acute, sub-serrate; lower ones 3-lobed: scales of the calyx incumbent, shorter than the rays.

columnaris, Ph. (W. r. Ju. 2f.) leaves pinnatifid; leafets lanceolate, outer ones generally largest: receptacles elongated, cylindrical. 1 f.

gracilis, N. (E.) slender, pubescent: stem 1—3-flowered: peduncles elongated: leaves spatulate-ovate, remotely denticulate: calyx spreading: disk conic.

tomentosa, E. (E. y. Au. 2f.) short-pubescent, sub-tomentose: branches erect, virgate: leaves lanceolate, acute, deeply toothed and entire, scabrous; lower ones ternate: scales of the calyx lance-linear, deflected, much shorter than the ray florets. "I am uncertain whether this is the sub-tomentosa of Ph. Elliott." 3—4 f.

mollis, E. (E. p. S. 2f.) stem hispid, villous, branching: leaves sessile, lance-ovate, dentate, soft-tomentose: florets of the ray numerous, thrice as long as the calyx. 2—3 f. Bidens.

13—2. RUELLIA. 40. 35.

strepens, (2) (ruel. w. p. Ju. 2f.) erect: leaves ovate, lance-ovate, or wedge-form, short-petioled, entire or repand, undulate, sub-ciliate at the base, smooth or sub-pilose on both sides: peduncles axillary, very short, about 3-flowered: divisions of the calyx linear, rather shorter than the tube of the corol, scarcely pilose: corol sub-equal. Very variable. 6—24 i. *S.*

Southern.

ciliosa, Ph. (3) (O. w. p. J. 2f.) erect, branching, more or less hirsute: leaves petioled, oval, oblong or lance-oblong, acute or obtusish, sometimes cuneate or attenuated into the petiole, undulate, entire or repand, sub-ciliate: peduncles axillary, short or wanting, 1—3-flowered: divisions of the calyx half as long as the tube of the corol, linear, hispid, ciliate with whitish hairs: corol sub-equal. 3—24 i.

tubiflora, Le Conte. (E. w. 2f.) erect, somewhat branching, smoothish or hirsute: leaves sub-sessile, oblong, repand or entire, undulate: peduncles axillary, short, 1-flowered: divisions of the calyx lance-linear, (1 inch,) one third the length of the tube of the corol: corol sub-equal, pubescent.

oblongifolia, Mx. (E. b. & p. Ju. 2f.) erect, pubescent: leaves sub-entire, oval and obovate, sub-sessile, sub-undulate: peduncles axillary, very short, 1—3-flowered: divisions of the calyx linear-subulate, longer than the tube of the corol, united at the base in a short tube: corol sub-ringent: stamens didynamous. This species differs from the preceding sufficiently to make us wonder how it has escaped our new genera manufacturers. Le Conte. Buchnera.

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(1) aspera, P? (2) humistrata, Mx. hirsuta, E. (3) hybrida, Ph.

6—3. Rumex. 12. 28.

sanguineus, (bloody dock. J. 2f.) valves entire, oblong, one principally bearing the grain-like appendage: leaves heart-lanceolate. 2—3 f. *S.*

crispus, (dock. O. Ju. 2f.) valves of the calyx ovate, entire, all bearing grain-like appendages on their backs: leaves lanceolate, undulate, acute. 2—3 f. *S.*

verticillatus, W. (O. J. 2f.) valves entire, all bearing grain-like appendages: spikes leafless, with the flowers half-whorled: leaves lanceolate: sheathing stipules cylindric. 2 f. *S.*

britannicus, (O. J. 2f.) valves entire, all bearing grain-like appendages: spikes of the panicle leafless: sheathing stipules obsolete, torn: leaves broad-lanceolate, flat, smooth. 2—3 f. *S.*

pallidus, Bw. (E. J. 2f.) valves ovate, entire, hardly larger than the grain: spikes slender: leaves lance-linear, acute.

obtusifolius, (O. J. 2f.) valves toothed, one principally bearing a grain-like appendage: radical leaves heart-oblong, obtuse: stem a little scabrous. Perhaps introduced. 2—4 f.

aquaticus, (water dock. Ju. 2f.) valves ovate, entire, bearing obsolete grains: leaves heart-lanceolate, acute. 3—4 f. *S.*

acutus, (M. 2f.) valves oblong, somewhat toothed, all graniferous: leaves heart-oblong, acuminate, whorls leafy. Introduced. 2—3 f.

acetosellus, (1) (field sorrel. O. g. p. M. 2f.) valves without grains: leaves lance-hastate: flowers dioecious. 6—12 i. *S.*

Exotic.

pulcher, (Ju. 2f.) valves toothed; one conspicuously graniferous: radical leaves panduriform. Naturalized.

patientia, (garden dock, patience. 2f.) valves entire, one of them bearing a grain-like appendage: leaves lance-ovate. Naturalized.

acetosus, (garden sorrel. 2f.) stem elongated: leaves oblong, sagittate-acute, clasping.

Southern.

persicarioides, (E. J. ☼.) valves toothed, each bearing a grain: leaves lanceolate, undulate, entire, petioled. 6—12 i.

crispatulus, Mx. (W.) valves obtusely cordate, all crested, 3-toothed; one naked; two unequally graniferous: spikes leafless: lower leaves oval; upper ones lanceolate; all undulate.

venosus, Ph. (W. Ap. 2f.) valves large, heart-reniform, entire, net-veined: leaves small, lance-oval, entire, veined. 12 f.

divaricatus ? (E. Ju. 2f.) valves toothed, each bearing a grain: leaves cordate-oblong, obtuse, pubescent. 1—2 f.

hastatulus, Bald. (E. Ap. 2f.) valves round-cordate, entire, graniferous: leaves petioled, hastate-oblong, auricles entire, obtuse. Dioecious. 1—3 f. Sabal.

Rumex, Oxyria.

4—4. Ruppia. 15. 13.

maritima, (sea tassel-grass. E. J. 2f.) floating: leaves pectinate, obtuse: flowers spiked. Myginda.

10—1. Ruta. 26. 81.

Exotic.

graveolens, (rue.) leaves more than decompound; leafets oblong, terminal ones obovate: petals entire. Mylocarium.

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(1) Lapathum, 2d ed.; but the acetosa and patientia seem to unite the two genera.

S.

6—3. Sabal. 1. 11.

Southern.

pumila, Wr. (1) (E. Ju. ☽.) leaves fan-form: scape panicled: flowers sub-sessile, small. Berry bluish black. 4—6 f.

minima, N. (E.) root creeping: stipe somewhat prickly, rough: fronds palmate, plicate, sub-7-cleft? Fruit brownish, hirsute. 8 i. Chamaerops.

Sabal, Chamaerops.

5—1. Sabbatia. 47. 46.

gracilis, Sy. (2) (E. r. Ju. ♂.) slender: branches lax, elongated, 1-flowered: leaves oval-linear: divisions of the calyx linear, about equalling the corol: divisions of the corol obovate: stem angular. 1 f. *S.*

stellaris, Ph. (3) (E. r. Au. ♂.) erect: branches dichotomous, elongated, 1-flowered: leaves lanceolate, acute: divisions of the calyx subulate, half as long as the corol: divisions of the corol obovate: stem terete. 12—18 i. *S.*

angularis, (American century. E. p. Au. ♂.) erect: leaves heart-ovate, clasping: flowers with long peduncles, corymbed: divisions of the calyx lance-linear: stem with 4-margined angles. 1—2 f. *S.*

calycosa, Mx. (E. r. Au. ♂.) erect, few-flowered: leaves oblong, obtusish, sessile: flowers solitary, about 7-parted: calyx leafy, exceeding the corol: divisions lanceolate. 1 f. *S.*

chloroides, Mx. (4) (E. r. Au. ♂.) weak: leaves lanceolate, erect: branches few, 1-flowered: flowers 7 to 13-parted: divisions of the calyx linear, shorter than the divisions of the corol. Var. *erecta*, E. stem rigid, erect: leaves linear: corol 10-parted; segments lanceolate. Var. *coriacea*, E. stem erect, sparingly branched: lower leaves sub-oval: corol thick, coriaceous, 8-parted. Var. *flexuosa*, E. stem flexuous: leaves lance-linear: corol 12-parted; segments long, lanceolate: stigmas revolute? 2—3 f. *S.*

corymbosa, Bald. (5) (E. w. Au. ♃.) leaves ovate, acute, closely sessile: stem somewhat angled: flowers corymbed: divisions of the calyx subulate, shorter than the corol. Var. *angustifolia*, leaves linear or lance-linear: calyx nearly as long as the corol. 1 f. *S.*

Southern.

paniculata, Mx. (6) (E. w. Au. ♃.) very branching: panicle diffuse: leaves lance-linear: stem sub-terete: branches alternate. 1—2 f.

brachiata, E. (E. r. Ju.) leaves lanceolate: panicle long: branches brachiate, about 3-flowered: corol twice as long as the calyx.

gentianoides, E. (E. r. Au.) leaves long, linear: flowers axillary, sessile; upper ones crowded: corol about 10-parted. Hydrophyllum.

3—2. Saccharum. 4. 10.

Exotic.

officinarum, (sugar cane.) flowers panicled, in pairs, one sessile and one pedicelled: corol 1-valved, awnless. From the East Indies.

Muhlenbergia.

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(1) adansoni, P. Corypha, Wr. minor, Jn. Raphis acaulis, W. Chamaerops, Mx. (2) campanulata, L. (3) gracilis, E. (4) Chlora dodecandra, L. (5) paniculata. Var. angustifolia, Ph. (6) Swertia difformis, L.

Saccharum, ERIANTHUS.

4—4. SAGINA. 22. 32.

procumbens, (pearl-wort. E. w. g. J. 2f.) stem procumbent, glabrous: petals very short. At New-Haven it grows mostly in running water, or very wet shady places, forming a kind of water mat: but it grows along dry road-sides in other places. 3—4 i. *S.*

apetala, (E. J. ☼.) stem erectish, pubescent: flowers sub-apetalous. Both species have linear, glabrous, connate leaves, and axillary flowers.
Tillaea.

19—12. SAGITTARIA. 5. 13.

sagittifolia, (arrow-head. O. w. Ju. 2f.) leaves lanceolate-acute, sagittate: lobes lanceolate, acute, straight. Var. *latifolia*, leaves ovate, sub-acute, sagittate: lobes ovate, slightly acuminate, straight. Var. *major*, leaves large, abruptly acute: scape sub-ramose. 1—2 f. *S.*

hastata, Ph. (E. w. Ju. 2f.) leaves lance-oblong, gradually acute, sagittate; lobes spreading, lanceolate, long-acuminate: scape simple: bracts and calyx roundish, obtuse. Var. *gracilis*, leaves linear, obtusish, sagittate; lobes spreading, elongated, linear. *S.*

pubescens, M. (E. w. Au. 2f.) pubescent: leaves oblong-ovate, acute, sagittate; lobes ovate, acuminate, straight: scape simple: bracts roundish, pubescent. This species and the preceding one are probably nothing more than varieties of the very variable latifolia. *S.*

obtusa, W. (w. J. 2f.) leaves broad-ovate, round-obtuse, mucronate, sagittate: lobes approximate, oblong, obliquely acuminate, straight: scape simple: bracts ovate, acute. Dioecious. *S.*

heterophylla, Ph. (O. w. Au. 2f.) leaves simple, linear and lanceolate, acute at both ends, or oval, acute, at the base obtuse, sagittate: lobes spreading, linear: scape simple, few-flowered: pistillate flowers sub-sessile: bracts broad-ovate, acuminate. 8—12 i.

rigida, Ph. (w. Ju. 2f.) leaves narrow-lanceolate, keeled below, rigid, very acute at both ends: scape ramose. Grows in deep water. Oswego, N. Y.

graminea, Mx. (1) (w. Ju. 2f.) leaves linear, long, 3-nerved: scape simple, few-flowered: bracts oblong, obtuse.

simplex, Ph. (w. Ju. 2f.) leaves lance-linear, acute, narrow below: scape simple, many-flowered: bracts and calyx round, obtuse. Perhaps a variety of the last. *S.*

acutifolia, Ph. (E. w. Ju. 2f.) leaves subulate, sheathed at the base, convex on the back: scape simple, few-flowered: bracts dilated, acuminate.

pusilla, N. (Au. ☼.) leaves linear, obtuse, short; summits foliaceous: scape simple, shorter than the leaves: flowers few; pistillate ones solitary, deflected: stamens about 7. Leaves rarely subulate, about the twelfth of an inch wide. In mud. 1—3 i.

natans, Mx. (w. Ju. 2f.) leaves floating, lance-oval, obtuse, 3-nerved, tapering to the base; lower ones sub-cordate: scape simple, few-flowered: lower peduncles elongated. *S.*

Southern.

lancifolia, (2) (E. w. J. 2f.) leaves broad-lanceolate, acute at each end, glabrous, coriaceous, somewhat perennial: scape simple: seed compressed, sub-falcate. 2—3 f.
Arum.

11—1. SALICORNIA. 12. 29.

herbacea, (samphire, glasswort. L. Au. ☼.) herbaceous, spreading: joints

(1) gramifolia, M. (2) falcata, Ph.

compressed at the apex, emarginate-bifid. Var. *virginica*, has the branches undivided, and the jointed spikes very long. The fructification is very obscure; but it may be known by its leafless nearly cylindric jointed branches. It grows in salt marshes along the sea-board. Onondaga salt springs. 12—18 i. *S.*

mucronata, Bw. (dwarf samphire. L. Au. ☉.) low, herbaceous: joints quadrangular at the bottom, compressed and truncate at the top: spikes oblong, with mucronate scales.

ambigua, Mx. (L. Ju. ♃. ♄.?) perennial, procumbent, branching: joint crescent-shaped, small: spikes alternate and opposite: calyx truncate.

Hippuris.

20—2. Salix. 50. 99.

1. *Leaves entire, or obsoletely serrate.*

viminalis, Hn. (basket willow. Ap. ♄.) leaves lance-linear, very long, acuminate, entire, sub-undulated, white-silky beneath: glands scattered near the margin: stipules small: aments precede the leafing: scales almost round, very hairy: germs sessile, ovate: style filiform: stigmas acute, undivided. Introduced. *S.*

candida, W. (white willow. E. Ap. ♄.) leaves lance-linear, very long, obsoletely denticulate at the apex, pubescent above, white-downy beneath; margin revolute: stipules lanceolate, about equalling the petioles: aments precede the leafing, cylindric: scales lance-obovate, down very long.

muhlenbergiana, W. (1) (speckled willow. E. Ap. ♄.) leaves lanceolate, acutish, sub-entire, white-hairy, rugose-veiny beneath; margin revolute: stipules lanceolate, caducous: aments precede the leafing: scales oblong, with villose margins: germs lance-ovate, silk-villose, long-pedicelled: styles short: stigma 2-cleft. Scale of the ament tipped with red. 3—5 f. *S.*

tristis, A. (mourning willow. E. Ap. ♄.) leaves lance-linear, acute at both ends, entire; margin revolute, smoothish above, rugose-veined and downy beneath: stipules none: aments precede the leafing, oblong. *S.*

recurvata, Ph. (shrub willow. A. Ap. ♄.) leaves lance-obovate, acute, entire; margin glandular, glabrous, glaucous beneath, in the young state silky: stipules none: aments precede leafing, recurved: scales black at the apex; hairs of the length of the germs: germs ovate, short-pedicelled, silky: style short: stigma 2-cleft. Probably a variety of S. rosmarinifolia.

repens, W. (2) (creeping willow. E. J. ♄.) creeping: leaves lance-oval, entire, acute, glabrous, somewhat silky beneath: stipules none: aments precede the leafing, ovate: scales obovate, obtuse, hairy, sooty-yellow at the apex: germs ovate-oblong, pedicelled, pubescent: style short: stigma 2-lobed: capsules glabrous. Very small. Found on the Whitehills by Bigelow and Boot.

reticulata, W. (E. J. ♄.) creeping: leaves round-oval, obtuse, very entire, glabrous, net-veined, glaucous beneath: stipules none: aments flower after leafing, peduncled, diandrous: scales obovate, obtuse, pubescent: germs ovate, sessile, villose: stigma sub-sessile, 2-parted. From Labrador, with the next five species.

vestita, Ph. (E. J. ♄.) creeping: leaves roundish, entire, glabrous above, net-veined, covered beneath with very long, appressed, silky hairs: stipules none: aments flower after leafing, peduncled, linear, silky: germs ovate, sessile, villose: style deeply 2-parted: stigmas 2-cleft.

uva-ursi, Ph. (E. M. ♄.) depressed: leaves spatulate-obovate, obtuse, very entire; margin sparingly glandular below, glabrous, shining above: stipules none: aments flower after leafing, lax: scales oblong, ciliate: germs ovate, pedicelled, glabrous: style 2-parted: stigma 2-lobed. Resembles Arbutus uva-ursi.

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(1) incana, Mx. tristis, M. alpina, Wr. (2) depressa, Hn. polymorpha, Eh.

cordifolia, Ph. (E. ♄.) depressed: leaves oval, sub-acute, cordate at the base, very entire, net-veined, glabrous above, pale beneath: nerves and margin pilose beneath: stipules semi-cordate.

obovata, Ph. (M. ♄.) diffuse: leaves obovate, obtuse, very entire, glabrous above, silky-villose beneath: stipules none: aments flower at leafing time, sessile, oblong, diandrous: scales obovate, apex black, pilose.

planifolia, Ph. (E. ♄.) erectish, divaricate: branchlets smooth: leaves lance-oblong, acute at each end, serrulate in the middle, very glabrous, spreading, flat, discoloured: stipules none.

prostrata, S. (E. ♄.) leaves without stipules, obtusely dentate, oval-acute, glaucous-silky beneath: stem prostrate.

pedicellaris, Ph. (stem-berried willow. E. Ap. ♄.) branchlets smooth: leaves lance-obovate, acute, entire, both sides glabrous, and coloured alike: stipules none: aments flower at leafing time, peduncled, glabrous: scales oblong, scarcely pilose, but half as long as the pedicels: germs ovate-oblong, glabrous, with very long pedicels: stigma sessile, 2-cleft.

lambertiana, W. (E. Ap. ♄.) leaves nearly opposite, lance-obovate, acute, glabrous, sub-serrate at the apex, discoloured: stipules none: aments precede the leafing: scales round, black: filament one: anthers two: germs sessile, oval-ovate, silky: style short: stigmas ovate, emarginate. Introduced?

rosmarinifolia, (rosemary willow. Ap. ♄.) leaves straight, lance-linear, acute at both ends, entire, sub-glandular at the margin, caducous-pubescent above, silky beneath: stipules narrow-lanceolate, erect: aments precede the leafing, ovate, recurved: scales oblong, obtuse, ciliate: germs pedicelled, lanceolate, villose: stigma sub-sessile, 2-cleft. 3 f. *S.*

fuscata, Ph. (sooty willow. Ap. ♄.) leaves lance-obovate, acute, glabrous, sub-serrate, glaucous beneath, in the young state pubescent: stipules very narrow: aments precede the leafing, nodding: scales obtuse, scarcely hairy within: germs short-pedicelled, ovate, silky: stigma sessile, 2-lobed.

2. *Leaves remotely and obtusely serrate.*

conifera, W. (1) (rose willow, cone-gall willow. Ap. ♄.) leaves lance-oblong, remotely serrate, acute, glabrous above, flat and downy beneath, the first year's growth glabrous: stipules lunulate, sub-dentate: aments precede the leafing: scales lanceolate, obtuse, villose: germs pedicelled, lanceolate, silky: style 2-cleft: stigma 2-lobed. The scaly cones are mere excrescences or galls, caused by the stings of insects. *S.*

myricoides, W. (gale leaf willow. E. Ap. ♄.) leaves lance-oblong, acute, 2 glands at the base, glabrous, glaucous beneath: stipules ovate, acute, glandular-serrate: aments flower at leafing time, villose, leafy at the base: scales lanceolate, obtuse, villose, dark-coloured: germs long-pedicelled, lanceolate, glabrous: style 2-cleft: stigma 2-cleft. *S.*

prinoides, Ph. (E. Ap. ♄.) leaves oval-oblong, acute, remotely wave-serrate, glabrous, glaucous beneath: stipules half-cordate, gash-toothed: aments precede the leafing, villose; germs pedicelled, ovate, acuminate, silky: style long: stigma 2-cleft. *S.*

discolor, W. (red-root willow, basket willow. E. Ap. ♄.) leaves oblong, obtusish, glabrous, remotely serrate, entire at the apex, glaucous beneath: stipules caducous, lanceolate, serrate: aments flower near leafing time, oblong, downy: scales oblong, acute, dark-coloured hairy: germs sub-sessile, lanceolate, downy: stigma 2-parted. *S.*

angustata, Ph. (Ap. ♄.) leaves lanceolate, acute, very long, gradually tapering to the base, serrulate, glabrous, both sides coloured nearly alike: stipules half-cordate: aments precede the leafing, erect, smoothish: germs pedicelled, ovate, glabrous: style 2-cleft: stigma 2-lobed. Resembles prinoides.

longifolia, W. (long-leaf willow. E. M. ♄.) leaves linear, acuminate at both ends,

(1) eriocephala, Mx. longirostris, Mx. the elder.

longeated, remotely denticulate, glabrous, both sides coloured alike : stipules narrow-lanceolate, denticulate : aments flower after leafing, peduncled, downy ; scales flat, retuse : filaments bearded at the base, twice as long as the scales. 2 f. *S.*

3. *Leaves closely and acutely serrate.*

Remark. The first six of the following species have about 3 stamens to each flower.

babylonica, (weeping willow. E. M. ♄.) branchlets pendant : leaves lanceolate, acuminate, serrate, glabrous, upper and lower sides of different colours : stipules roundish, contracted : aments flower at leafing time : germs sessile, ovate, glabrous. Supposed to be the willow on which the Israelites hung their harps, when captive in Babylon. Introduced. *S.*

falcata, Ph. (E. ♄.) leaves long, lance-linear, gradually tapering above, subfalcate, acute at the base, close-serrate, glabrous both sides, in the young state silky : stipules lunulate, toothed, deflected. Branches very slender and brownish. *S.*

nigra, W. (1) (brittle-joint willow, black willow. E. M. ♄.) leaves lanceolate, acute at both ends, serrulate, same colour both sides, glabrous : petioles and midribs downy above : stipules contracted, toothed : aments flower at leafing time, erect, cylindric, villose : scales oblong, very villose : filaments 3—6, bearded at the base : germs pedicelled, ovate, glabrous : style very short : stigma 2-cleft. 20 f. *S.*

lucida, W. (shining willow. M. ♄.) leaves ovate-oblong, cuspidate-acuminate, rounded at the base, serrate, glandular, glabrous both sides, shining : stipules oblong, glandular-serrate : aments flower in leafing time : scales lanceolate, obtuse, hairy at the base, serrate at the apex, glabrous : germs lance-subulate, glabrous : style 2-cleft : stigma obtuse. Size between shrub and tree. *S.*

rigida, W. (2) (stiff-leaf willow. E. Ap. ♄.) leaves lance-oblong, acuminate, sub-cordate at the base, rigid, glabrous, sharply serrate ; lower serratures elongated : petioles villose : stipules broad-cordate, obtuse, glandular-serrate : aments flower at leafing time : scales lanceolate, dark-coloured, woolly : germs long-pedicelled, lanceolate, glabrous : style very short : stigma 2-parted. Branches red towards the end, in the youg state pubescent. Used also in basket-making. *S.*

cordata, W. (heart-leaf willow. Ap. ♄.) leaves lance-oblong, acuminate, cordate at the base, sharply serrate, glabrous, paler beneath : stipules broad, round-ovate, cartilaginous-serrate : aments flower at leafing time : scales lanceolate, dark-coloured, woolly : germs pedicelled, lanceolate, glabrous : style very short : stigma 2-cleft. 6—8 f. *S.*

grisea, W. (3) (grey willow. E. Ap. ♄.) leaves lanceolate, acuminate, serrulate, glabrous above, downy on the midrib, silky or naked beneath : stipules linear, deflected, caducous : ament precedes the leafing : scales oblong, hairy, dark-coloured at the apex : germ oblong, pedicelled, silky : stigma sessile, obtuse. Joints brittle at the base. 8 f. *S.*

alba, (E. M. ♄.) leaves lanceolate, acuminate, serrate, silky on both sides, lower serratures glandular : stipules obsolete : aments elongated, flowering at leafing time : scales lance-oval, one-coloured, pubescent : germs subsessile, ovate-oblong, at length glabrous : style short : stigma 2-parted, thick. Introduced. *S.*

vitellina, (yellow willow. E. M. ♄.) leaves lanceolate, acuminate, thickly serrate, glabrous above, whitish-silky beneath : stipules none : aments flower in leafing time, cylindric : scales lance-ovate, both sides coloured alike, pubescent without : germs sessile, lance-ovate, glabrous : stigma sub-sessile, 2-

(1) caroliniana, Mx. pentandra, Wr. vulgaris, Clayton. (2) cordata, Mx. cordifolia, Banks. (3) sericea, M.

lobed. Middle size tree. Var. *alba*, has the leaves white-silky both sides, and very long aments. This variety is usually the tallest. *S.*

ambigua, Ph. (E. Ap. ♄.) leaves lanceolate, acuminate, glabrous, both sides of the same colour, glandular-serrate: aments flower in leafing time: the pair of nectaries large, with lanceolate, deformed lobes, toothed at the apex, glabrous: the terminal florets have 3 stamens. Resembling the vitellina.

decipiens, Hn. (E. Ap. ♄.) leaves lanceolate, acuminate, serrate at each end, very glabrous, both sides coloured alike: petioles glandular-toothed: stipules round: aments flower at leafing time: scales obovate, villose: staminate nectaries paired: germs sub-sessile, lanceolate, glabrous: stigmas sessile, 2-parted. Branches very brittle. Introduced. *S.*

petiolaris, W. (Ap. ♄.) leaves lanceolate, wholly serrate, smooth, glaucous-silky beneath, generally unequal at the base: stipules lunulate, toothed, small: aments precede the leafing, loose: scales obovate, obtuse, having black hairs: germs long-peduncled, ovate, silky, stigmas sessile, 2-lobed.

russeliana, W. (E. ♄.) leaves lanceolate, acuminate, serrate, glabrous: aments flower in leafing time: florets generally with 3 stamens: germs pedicelled, subulate, smooth: styles elongated. Tall tree. Introduced.

myrsinites, W. (E. M. ♄.) leaves oval-ovate, wholly serrulate, both sides glabrous, shining and coloured alike: stipules lanceolate, serrate: branches rough: aments flower a little before leafing time, erect, cylindric; scales lance-oblong, long-villous: germs lance-ovate, sessile, silky: stigmas sub-sessile, 2-cleft. Labrador. 1 f.

herbacea, W. (A. Ju. ♄.) leaves round, sub-retuse, serrate, glabrous and shining on both sides: stipules none: aments flower after leafing, few-flowered: scales obovate, obtuse, villose: germs oblong-ovate, sub-sessile, glabrous: stigmas very short, sub-sessile. On the northwest coast. Smallest of all the species. 1 i.

triocephala, Mx. (E. Ap. ♄.) leaves oblong-oval, somewhat retuse at the base, serrulate: twigs downy: aments oval, very villose. Diandrous.

Southern.

houstoniana, Ph. (E. ♄.) leaves lance-linear, acute, finely serrate, glabrous, shining, one-coloured: stipules none: aments flower at leafing time, cylindric, villose: scales ovate, acute: filaments 3—5, bearded to the middle.

Fraxinus.

5—2. Salsola. 12. 29.

kali, (salt-wort. L. Ju. ☼.) herbaceous, decumbent: leaves channeled, spinose: calyx margined, axillary. Var. *caroliniana*, leaves dilated, shorter, terete, nerveless, spinose: stem smooth or hairy: calyx with a broader margin. Seed cochleate. *S.*

tragus, (L. Ju. ☼.) herbaceous, spreading, smooth: leaves subulate, fleshy, mucronate-spinous: flowers sub-solitary: calyx subovate, margin flattened, discoloured.

soda, (L. ☼.) herbaceous, smooth: branches ascending: leaves semi-terete, acutish: fruit-bearing calyx transversely carinate in the middle, sub-membranaceous.

Ulmus.

Salsola, Chenopodium.

2—1. Salvia. 42. 39.

urticifolia, (nettle sage. A. b. J. ♃.) villose-viscous: leaves ovate-oblong, toothed, decurrent along the petiole: calyx 3-toothed; upper segment 3-toothed. *S.*

lyrata, (wild sage. E. b. M. ♃.) radical leaves lyrate, toothed: upper lip of the corol very short: stem nearly leafless, reverse-hairy. Var. *obovata*, has the leaves obovate, repand. 1—3 f. *S.*

claytoni, E. (1) (vervain sage. b-p. J. 2f.) leaves heart-ovate, sinuate, toothed, rugose: teeth of the upper lip of the calyx connivent. 1 f. *S.*

Exotic.

officinalis, (sage. b. J. 2f. or ♄.) leaves lance-ovate, crenulate; whorls few-flowered: calyx mucronate.

sclarea, (clarry. ♂.) leaves rugose, cordate, oblong, villose, serrate: floral bracts longer than the calyx, concave, acuminate.

Southern.

azurea, Lk. (2) (E. b. w. Au. 2f.) leaves lance-linear; lower ones serrate: stem and leaves smooth: calyx pubescent, short-3-cleft. 4—6 f.

coccinea, (E. r. Ju. 2f.) leaves cordate, acute, tomentose, serrate: corol twice as long as the calyx and narrower. 1—2 f.

trichostemmoides, Ph. (W. b. ☼.) leaves lanceolate, serrate: racemes terminal: flowers opposite: corol equal to the 3-cleft calyx: stem brachiate-branched.

obovata, E. (E. Ju.) leaves large, obovate, toothed, pubescent: whorls 6-flowered. 18 i. Collinsonia.

21—1. SALVINIA. 55. 5.

natans, (3) (W. ☼.) leaves oval, obtuse, with fascicled bristles above: petioles pilose: fruit sub-sessile, aggregate. Sphagnum.

5—3. SAMBUCUS. 43. 58.

canadensis, (black-berried elder. O. w. J. ♄.) branchlets and petioles glabrous: leafets about in 4 pairs, oblong-oval, glabrous, shining, acuminate: cyme lax, divided into about 5 parts. 8—15 f. *S.*

pubescens, Ph. (4) (red-berried elder. O. w. M. ♄.) bark warty: leafets in 2 pairs, lance-oval, pubescent beneath: flowers raceme-panicled, or in a crowded bunch. 6—12 f. *S.* Rhus.

5—1. SAMOLUS. 21. 34.

valerandi, (brookweed. w. Ju. 2f.) leaves obovate: racemes elongated: pedicels bracted near the middle. Damp. 8—12 i. *S.*

Southern.

ebracteatus, Kunth. (W. w. 2f.) stem short, robust, smooth, divided at the base: leaves obovate, obtuse, somewhat fleshy, attenuate at the base: racemes elongated, sub-pubescent: pedicels filiform, without bracts. Sabbatia.

13—1. SANGUINARIA. 27. 62.

canadensis, (blood-root. O. w. Ap. 2f.) leaves sub-reniform, sinuate-lobed: scape 1-flowered. A variety, *stenopetala*, has linear petals. 6—10 i. *S.* Podophyllum.

4—2. SANGUISORBA. 54. 92.

canadensis, (burnet saxifrage. w. Ju. 2f.) flowers in a long cylindric spike: stamens several times longer than the corols. The leaves resemble the burnet. 3—5 f. *S.*

media, (A. r-w. Ju. 2f.) spikes cylindric: stamens a little longer than the corol: spikes shorter, tinged with red. Ph. A doubtful species. T. *S.* Bartonia.

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(1) verbenaca, M. (2) acuminata, M. angustifolia, Mx. mexicana, Wz. (3) Marsilea, L. (4) pubens, Mx.

5—2. SANICULA. 45. 60.

marylandica, (sanicle. O. w. J. 2f.) leaves digitate; leafets oblong, gashed: part of the flowers are fertile, sessile and sub-ternate; the others are barren, pedicelled, and the most numerous. Var. *canadensis*, leaves sub-ternate; leafets ovate, coarsely toothed. 2—3 f. *S.* Daucus.

17—1. SANTOLINA. 49. 55.

Southern.

suaveolens, Ph. (W. y. J. ☼.) glabrous: stem corymb-branched: leaves sub-bipinnatifid; divisions acute, linear: peduncles terminal, 1-flowered. Sweet scented. Tanacetum.

8—3. SAPINDUS. 23. 65.

Southern.

saponaria, (E. w. ♄.) leaves glabrous, abruptly pinnate; leafets lance-oval: rachis winged: fruit spherical. 20—30 f. Adoxa.

10—2. SAPONARIA. 22. 82.

Exotic.

officinalis, (soapwort, bouncing bet. w. J. 2f.) calyx cylindric: leaves lance-ovate, opposite, sub-connate, entire. Probably introduced, and naturalized. 10—18 i.

vaccaria, (field soapwort. r. Au. ☼.) calyx 5-cornered, cone-ovate: leaves ovate, acuminate, sessile. Naturalized. 6—18 i. Cucubalus.

5—3. SAROTHRA. 20. 82.

gentianoides, L. (1) (nit-weed, false john's wort. p. y. J. ☼.) small, erect, setaceous-ramose: leaves minute, close-pressed: flowers on the branchlets alternate, solitary. 4—8 i. *S.* Turnera.

12—I. SARRACENIA. 54. 62.

purpurea, (side-saddle. O. p. J. 2f.) leaves radical, short, gibbose-inflated or cup-form, contracted at the mouth, having a broad arched lateral wing; the contracted part of the base hardly as long as the inflated part. Scape with a single, large nodding flower. In marshes. 1—2 f. *S.*

heterophylla, Ea. (E. y. J. 2f.) leaves radical; outer ones long-funnel-form, not contracted at the mouth, having a narrow straight lateral wing; the contracted part at the base about twice as long as the inflated part; the inner leaves short, gibbose-inflated, contracted at the mouth, having an arched lateral wing, the contracted part at the base hardly as long as the inflated part: style longer than the filaments. The whole plant palish yellow, and very slender. Intermediate between purpurea and flava. In swamps at Northampton, Mass. Said to be found in New-Hampshire.

Southern.

rubra, Wr. (2) (E. r-p. J. 2f.) leaves slender; lateral wing linear; appendage ovate, erect, obtuse, mucronate, contracted at the base. 6—10 i.

flava, Mx. (E. y. J. 2f.) leaves large, funnel-form; throat expanding; lateral wing nearly wanting; appendage erect, contracted at the base, reflexed at the sides. 18—24 i.

catesbaei, E. (E. 2f.) leaves stiffly erect; tube funnel-form; lateral wing linear; throat straight; appendage erect, sub-reniform, reticulate with coloured veins. 12—18 i.

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(1) hypericoides, N. Hypericum sarothra, Mx. (2) psyttacina, Mx. ?

variolaris, Mx. (1) (E. y. J. 2f.) leaves slightly ventricose, with the tube near the summit spotted on the back; appendage arched, incurved; lateral wing slightly dilated. 12—18 i. Nuphar.

13—1. SATUREJA. 42. 39.

Exotic.

hortensis, (summer savory. b-w. Ju. ☼.) peduncles axillary, somewhat in a cyme: leaves lanceolate, entire: stem brachiate.

montana, (winter savory. ♄.) peduncles somewhat 1-sided: segments of the calyx acuminate, mucronate: leaves mucronate. Molucella.

7—4. SAURURUS. 2. 6.

cernuus, (lizard's tail, breast weed. W. Au. 2f.) stem angular, sulcate: leaves alternate, heart-oblong, acuminate. Rare in New-York east of Cayuga Lake —abundant west of it. 1—2 f. Rhexia.

10—2. SAXIFRAGA. 13. 84.

1. *Leaves radical, undivided: stem nearly naked.*

aizoon, W. (W. 2f.) leaves aggregate, spatulate, acutish, glabrous, with cartilaginous teeth: stem simple, leafy, pilose: calyx glabrous. 3 i.

stellaris, W. (E. w. Ju. 2f.) leaves wedge-form, serrate, pilose at the margin: stem simple, naked: petals acute: capsule superior. Labrador.

serpyllifolia, Ph. (W. 2f.) erect: leaves small, oval, glabrous: stem 1-flowered, few-leaved: petals obovate.

androsacea, Ph. (W. w. 2f.) pubescent: leaves petioled, linear-spatulate: stem leafy, 1—2-flowered.

bronchialis, W. (W. 2f.) stoloniferous: leaves imbricate, subulate, flat, mucronate, spinose, ciliate: stem nearly naked, panicled. *S.*

nivalis, (W. w. J. 2f.) leaves roundish-wedge-form, crenate before, decurrent into the petiole: stem naked, simple: racemes crowded. 2 i.

virginiensis, Mx. (2) (rock saxifrage. O. w. M. 2f.) minutely pubescent: leaves oval, obtuse, crenate, decurrent into the petiole: flowers sub-sessile on the dichotomous branches of an almost leafless scape. 1—15 i. *S.*

geum, W. (W. 2f.) leaves reniform, toothed, veinless and pilose on both sides: stem naked, panicled.

pennsylvanica, (water saxifrage. O. g-w. J. 2f.) pubescent: leaves lance-oblong, acute at both ends, obsoletely denticulate; scape leafless: panicle oblong, with fascicled branches at the top. 1—4 f. *S.*

2. *Leaves undivided: stem leafy.*

oppositifolia, W. (E. p. M. 2f.) caespitose: leaves cauline, opposite, imbricate, ovate, obtuse; upper ones ciliate: flowers terminal, solitary, sessile. Labrador.

airoides, W. (E. y. 2f.) decumbent, caespitose: leaves cauline, linear, alternate, tooth-ciliate: panicle few-flowered: petals as long as the calyx.

setigera, Ph. (3) (W. w. 2f.) pubescent: leaves radical, aggregate, spatulate, acute, spinose-ciliate: stem leafy, about 2-flowered: calyx hispid: very long setaceous twigs in the axils of the leaves.

hirculus, (E.) leaves cauline, alternate, lanceolate, naked, unarmed; stem erect. North Somerset.

3. *Leaves lobed.*

rivularis, S. (E. w. J. 2f.) erect: leaves petioled, palmate: upper ones spatulate: stem few-flowered: root fibrous: germ half inferior. Labrador.

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(1) minor, Wr. aduncа, S. (2) nivalis, M. vernalis, Bw. virginica, N. (3) flagellaris, Sternb.

sibirica, W. (E. w. 2f.) ascending: leaves reniform, palmate, pilose; cauline ones sessile: petioles hirsute: pedicels very long, filiform, 2-cleft, naked. Labrador.

pectinata, Ph. (W. 2f.) caespitose: stems numerous, leafy: leaves 3-lobed; lobes 3-cleft, linear, acute, glabrous: midrib furrowed: flowers racemed.

caespitosa, W. (W. y. J. 2f.) leaves radical, aggregate, fleshy, linear, obtuse, entire or 3-cleft, nerved beneath: stem erect, nearly naked, few-flowered: petals twice as long as the calyx. Var. *groenlandica*, leaves cauline, palmate, many-cleft: divisions acute.

tricuspidata, W. (E. w. J. 2f.) leaves radical, aggregate, wedge-form, ciliate, acutely 3-toothed: stem ascending, racemed: petals lanceolate, thrice as long as the calyx. Hudson's Bay.

cernua, (A.) leaves cauline, palmate, petioled: stem very simple, 1-flowered, bulbiferous.

caespitosa, (1) (A.) leaves digitate, (3-cleft,) minutely nerved, sub-hirsute: anthers sagittate: stigma hooded, reflexed: stem sub-viscous, 2—3-flowered.

Exotic.

sarmentosa, (beef-steak, creeping saxifrage. w. Au. 2f.) leaves roundish, toothed, hairy; sending off creeping shoots: 2 petals in each flower elongated.

Southern.

leucanthemifolia, Mx. (A. w. r. y. Ju. 2f.) very hirsute: stem somewhat naked: leaves elongated-spatulate, acutely-toothed: stems divaricate-dichotomous: panicle capillary, lax: calyx reflexed: petals unequal. 18—24 i.

erosa, Ph. (A. y-g. Ju. 2f.) nearly glabrous: stem naked: leaves lance-oblong, acute, erose-dentate: panicle oblong; branches divaricate, very branching, lax-flowered: pedicels filiform.

jamesii, T. (W. p.) leaves reniform, crenate-toothed, papillose-punctate on both sides, nearly glabrous: stem short, few-flowered: divisions of the calyx triangular-ovate, acute, glandular pubescent: petals orbicular with long claws. 1—2 i. Tiarella.

4—1. SCABIOSA. 47. 56.

Exotic.

stellata, (star scabious, cat's eye. y-w. ☉.) corol 5-cleft, radiate: leaves cut and jagged: outer crown of the seeds orbicular, large, spreading, membranaceous, many-nerved.

atropurpurea, (sweet scabious. r. 2f.) corol 5-cleft, radiating: leaves pinnatifid and cut: receptacle cylindric: outer crown of the seed short, lobed and crenate. Polypremum.

Scandix, URASPERMUM.

6—3. SCHEUCHZERIA. 5. 13.

palustris, (less flowering rush. E. g-y. J. 2f.) stem glabrous: leaves semi-cylindric, sheathing at the base; each having a lateral pore on the inner side, immediately below the cartilaginous tip. In ponds and marshes. 1 f. Triglochin.

19—5. SCHISANDRA. 11. 77.

Southern.

coccinea, Mx. (E. r. & y. J. ♄.) glabrous: leaves alternate, lanceolate, subdenticulate, petioled, sometimes sub-cordate. Climbing. 10—15 f. Zizania.

21—2. SCHISTIDIUM. 56. 4.

ciliatum, stem ramose: leaves lance-ovate, concave, diaphanous at the apex.

(1) mixta, P.

denticulate: capsules ovate, sub-sessile: calyptre very long, mitre-form or bell-conic, split at the base into many small irregular divisions, bautifully reticulate. Anoectangium.

21—1. SCHIZÆA. 55. 5.

pusilla, Ph. (one-sided fern. E. Ju. 2f.) frond simple, linear-compressed: spikes conglomerate, inflexed, one-way. The only known locality of this interesting little fern is near Quaker-bridge, New-Jersey, in a swamp. 3—6 i. Lygodium.

3—1. SCHOENUS. 3. 9.

mariscoides, M. (E. Ju. 2f.) culm terete or sub-sulcate, leafy: leaves channeled, semi-terete: umbel terminal: fascicles of spikes 3 on each peduncle: seed naked, rounded at the base. 2 f.

Southern.

hispidulus, Vahl. (E.) peduncles axillary and terminal, 3-spiked: spikes globose, pedicelled: leaves filiform, hispid.

effusus, Sw. (saw grass. E. Au.) culm leafy, obtusely 3-angled: leaves prickly forwards: panicle terminal, very long, diffuse: seed ovate, longitudinally wrinkled. 6—10 f. Rhyncospora.

Schoenus, RHYNCOSPORA.

3—1. SCHOLLERA. 6. 17.

graminifolia, W. (1) (yellow-eyed water grass. O. y. Ju. 2f.) leaves all linear, grass-like: stem slender, floating. 6—18 i. Heteranthera.

15—10. SCHRANKIA. 33. 93.

Exotic.

sensitiva, (2) (sensitive plant.) prickly: leaves pinnate; leafets in pairs, inmost ones minute.

Southern.

uncinata, (3) (sensitive briar. E. p. Ju. 2f.) stem prostrate angled, prickly: leaves alternate, abruptly bipinnate: leafets small, sub-oval, gibbous at the base, thinly pilose, irritable. 2—3 f. Sida.

13—2. SCHWALBEA. 40. 40.

americana, W. (chaff-seed. E. p-y. J. 2f.) simple, pubescent: leaves lanceolate: racemes terminal: flowers alternate. 2 f. *S.* Euchroma.

Schweinitzia, MONOTROPSIS.

6—1. SCILLA. 10. 14.

Exotic.

maritima, (squill. w.) scape long, naked, many-flowered: bracts bent back. Root bulbous. Orentium.

Scilla, PHALANGIUM.

3—1. SCIRPUS. 3. 9.

1. *Seed surrounded with bristles at the base.*

(Style articulated to the seed: base dilated and persistent. Seed often lenticular. ELEOCHARIS. Br.)

tenuis, W. (4) (O. Ju. 2f.) culm very slender, quadrangular: spike oval, acute

(1) Leptanthus gramineus, Mx. Heteranthera, Ph. (2) Mimosa, 4th Ed. (3) Mimosa horidula, Mx. intsia, Wr. (4) marginatus, M. E.

at each end: glumes ovate, obtuse: stamens 3: styles 3-cleft: seed rugose. 8—12 i. *S.*

glaucus, T. (L. Ju. 2f.) culm many-angled, glaucous: spike ovate, acute: glumes ovate, obtuse or emarginate. Stamens 3: styles 2-cleft. 1 f.

palustris, (E. J. 2f.) culm round, inflated: spike lance-oblong: glumes somewhat obtuse: seed roundish, punctate, rugose: bristles scabrous. 18—24 i. *S.*

capitatus, (E. Ju. 2f.) culm terete or sub-compressed: spike ovate, obtuse: seed oval, compressed, smooth. *S.*

acicularis, (1) (O. Ju.) culm setaceous quadrangular: spike ovate, acute, 3—6-flowered: glumes somewhat obtuse: stamens 3: styles bifid: seed obovate. 3—6 i. *S.*

pusillus, Vahl. (L. Au.) culm compressed and sub-angular: spike ovate, compressed: seed obovate: stamens 3: style 2—3-cleft. 1 i. *S.*

intermedius, M. (E. S.) culms caespitose, quadrangular, sulcate: spikes ovate, oblong, acute glumes acutish: stamens 3: style 2-cleft: seed broad-obovate, compressed: tubercle distinct. 3—4 i.

planifolius, M. (E. J.) culm triangular: radical leaves linear, flat, nearly equalling the culm: spike terminal, oblong, compressed, shorter than the cuspidate bracts at the base. 8 i.

subterminalis, T. (E. Au.) culm floating, sulcate, inflated, leafy below: spike solitary, somewhat terminal, lanceolate: style 2-cleft: seed 3-angled. 3 f.

caespitosus, (E. Ju.) culms caespitose, terete: spikes ovate, few-flowered: lower glumes bract-like as long as the spike: sheaths with rudiments of leaves. Var. *callosus*, glumes thickened and cartilaginous at the tips. 8 i.

(Style filiform, not bearded, caducous. SCIRPUS. L. Br.)

americanus, P. (2) (E. Au.) culm nearly naked, 3-angled, sides concave: spikes lateral, 1—5, ovate, conglomerate, sessile: glumes round-ovate, mucronate: seed 3-angled, acuminate. One variety has 3—5 spikes nearly terminal; another has generally a solitary spike remote from the extremity of the culm. 3—5 f. *S.*

debilis, M. (E. Au.) culms caespitose, deeply striate: spikes about 3, lateral, ovate, sessile: glumes ovate, obtuse, mucronate. 8—12 i. *S.*

lacustris, (3) (E. J.) culm terete, attenuated above, naked: panicle, sub-terminal: spikes peduncled, ovate. 4—8 f. *S.*

acutus, M. (E. Ju.) culm terete, (not attenuated,) spotted: peduncles numerous, sub-lateral: spikes oblong: glumes pubescent, mucronate. 4 f.

atrovirens, M. (E. Ju.) culm triangular, leafy: cyme terminal, compound, proliferous: involucre 3-leaved: spikes conglomerate, ovate, acute: glumes ovate, mucronate, pubescent. 2 f.

brunneus, M. (4) (E. Au.) culm leafy, obtusely triangular: cyme decompound: involucre 3—4-leaved: spikes round-ovate, clustered in heads of about sixes: glumes ovate, obtuse. 2—3 f. *S.*

macrostachyus, M. (5) (L. Au.) culm triangular, leafy: corymb clustered: involucre about 3-leaved, very long: spikes oblong: glumes ovate, 3-cleft: middle segment subulate and reflexed: style 3-cleft. 3—4 f. *S.*

(Style filiform, caducous. Bristles much longer than the seed. TRICHOPHORUM. P.)

eriophorum, Mx. (6) (O. Au. 2f.) culm obtusely triangular, leafy: panicle decompound, proliferous, nodding: spikes all peduncled: bristles surrounding the seed, exsert. 4—5 f. *S.*

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(1) trichodes, M. E. capillaceus, Mx. (2) triqueter, Mx. (3) validus, Vahl. Ph. (4) exaltatus, Ph. (5) robustus, Ph. maritimus, Bw. E. (6) Eriophorum cyperinum, L. Trichophorum cyperinum, P.

lineatus, Mx. (E. Au.) culm 3-angled, leafy: panicles terminal and lateral, decompound, at length nodding: involucre 1—2-leaved: spikes ovate: glumes lanceolate, somewhat carinate: bristles longer than the seed. 2—3 f. *S.*

2. *Seed naked at the base.*

(*Style simple at the base, not articulated to the seed, caducous.* ISOLEPSIS. Br.)

subsquarrosus, M. (1) (E. Au. 2f.?) culm triangular, nearly naked, incurved: spikes 3, nearly terminal, ovate: glumes somewhat squarrose at the tip: involucre 2-leaved, very long, unequal. 2 i. *S.*

capillaris, (2) (E. Au. ☼.) culm nearly naked, 3-angled, capillary: spikes ovate, 2—3 of them peduncled, with an intermediate sessile one. 8 i. *S.*

autumnalis, (E. Au. 2f.) culm compressed, ancipitous: umbel compound: involucre 2-leaved: spikes lanceolate, acute, somewhat 4-sided. 8—12 i. *S.*

Southern.

simplex, E. (E. J. 2f.) culm terete: spike somewhat ovate: glumes obtuse: seed obovate, 3-angled. 8—13 i.

filiformis, Vahl. (E. Au.) spike cylindric, oblong, obtuse: scales roundish: seeds naked at the summit: culm filiform.

geniculatus, Vahl. (E. Ju.) spike ovate-oblong: scales round-ovate: culms terete, growing in distinct clusters.

tuberculatus, Mx. (E. Au.) culm terete, striate: glumes very obtuse, loose, appressed: seed somewhat 3-angled: tubercle sagittate, larger than the seed. 12 i.

quadrangulatus, Mx. (E. M. 2f.) culm acutely 4-angled; 3 sides concave; one wider, flat: spike cylindric: glumes very obtuse. 1—2 f.

equisetoides, E. (E. J.) spike cylindric, terminal; scales very obtuse: culms terete, doubly jointed. Resembles Equisetum hyemale. 18—24 i.

mucronatus, Vahl. (E. Au.) leafless: spikes oblong: scales entire, acuminate: culm 3-angled.

stenophyllus, E. (E. Au. ☼.) culm filiform, obtusely 3-angled: leaves setaceous: involucre 4-leaved, very long: spikes clustered: glumes mucronate. 3—4 i.

coarctatus, E. (3) (E. Oct.) umbel compound, crowded: spikes small, lance-linear: involucre setaceous, with one of its leaves longer than the umbel: leaves filiform, concave on one side. 1 f.

castaneus, Mx. (4) (E. Ju.) spikes ovate-oblong, obtuse: involucre 2-leaved, rigid, as long as the compound umbel.

sulcatus, E. (E. Au.) spikes lance-ovate, sometimes acuminate: umbel compound, as long as the involucre: seed longitudinally furrowed. 1 f.

nitens, Vahl. (E. Ju.) spikes ovate, pedicelled: corymbs generally compound, axillary and terminal: culm terete.

divaricatus, E. (E. J.) culm obtuse-3-angled: umbels decompound, divaricate: spikes oval, pendulous. 3—4 f.

schoenoides, E. (E.) culm 3-angled: panicles decompound, axillary and terminal, pendulous: spikelets clustered: seed obovate, rugose, surrounded by bristles. 2—3 f.

sylvaticus, Mx. (2f.) spikes oblong, crowded: corymb leafy, more than decompound: scales oblong, obtusish, green: culm leafy, 3-angled.

ovatus, Vahl. (Ju. 2f.) spike ovate: scales oblong: flowers somewhat diandrous: culm sub-compressed: sheaths unarmed.

Fimbristylis.

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(1) minimus, Ph. (2) ciliatifolius, E. (3) castaneus, M. (4) Fimbristylis, Vahl.

Scirpus. Fimbristylis. Rhyncospora.

10—2. Scleranthus. 22. 86.

annuus, (knawel, gravel chickweed. O. w-g. J. ☉.) calyx of the fruit spreading, acute: stem spreading, sub-prostrate. Saponaria.

19—3. Scleria. 3. 9.

triglomerata, Mx.? E. (1) (whip grass. E. J. 2f.) culm acutely triangular, scabrous: leaves lance-linear, channelled, a little scabrous, sparingly pilose: spikes fascicled, lateral and terminal: glumes ciliate: nut smooth. 2 f. *S.*

pauciflora, M. (2) (E. Au. 2f.) culm 3-angled, glabrous: leaves linear, glabrous: spikes lateral and terminal, few-flowered; lateral ones pendulous; terminal ones clustered: glumes glabrous: nut rugose. 12—18 i. *S.*

verticillata, M. (Au. 2f.) culm simple, 3-sided: culm and leaves glabrous: spike naked, with alternate distant glomerules: glumes glabrous: nut globose, mucronate, transversely rugose-warty. 1 f. *S.*

reticulata, Mx. (E. Ju.) culm and leaves glabrous: sheaths winged: spikes scattered, axillary and terminal: glumes and bracts glabrous: nut reticulate, dotted. 1—2 f. *S.*

Southern.

oligantha, E. (E. M.) culm slender, 3-angled, glabrous: leaves narrow, nerved, slightly scabrous: spikes 2—3, sub-terminal, sessile; one lateral, one remote, long-peduncled: nut very smooth, shining. 12—18 i.

gracilis, E. (E.) culm filiform, 3-angled: culm and leaves glabrous: spikes few-flowered, fascicled, sub-terminal: glumes glabrous: nut smooth, shining. 1 f.

ciliata, Mx. (E. J.) culm erect, glabrous, nearly naked: leaves linear, channelled, pubescent above: spikes terminal, clustered bracts and glumes ciliate: nut rugose. 1—2 f.

hirtella, Mx. (E. Ju.) culm erect, slender: culm, leaves and bracts a little hirsute: spikes terminal and axillary: glumes pubescent: nut transversely-rugose. Var. *strigosa*, angles of the stem, margins and midrib of the leaves more hirsute: glumes ciliate: nut tuberculate-rugose. Perhaps a distinct species. Elliott.

interrupta, Mx. (E.) culm simple, 3-angled: culm and leaves pubescent: spike glomerate, naked; clusters alternate, distant: glumes bristly: nut globose, mucronate, transversely warty-rugose. Tripsacum.

21—6. Scleroderma. 58. 1.

citrinum, middle size, roundish, sending off shoots, pale-yellow: scales thickish, obsolete. On the earth among oaks, or on trunks in autumn. Lycogala.

21—6. Sclerotium. 58. 1.

semen, (barked puff-ball. P.) globular or pear-form, blackish, becoming rugged; gregarious. On dead potato-stems in autumn.

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(1) Elliott says, this is not the triglomerata of Pursh, but may be of Mx. Pursh's description is as follows: *triglomerata*, (J. 2f.) culm erect, simple, 3-sided, scabrous: leaves scabrous at the margin: fascicles few-flowered, terminal: glumes ovate, mucronate, scabrous: nuts globose, acute, rugose.

(2) Torrey, in a letter to Dr. Darlington, says, this is not the pauciflora of Pursh. Pursh's description is as follows: *pauciflora*, (Au. 2f.) culm erect, simple, 3-angled, scabrous: leaves narrow-linear, channelled, scabrous at the margin: fascicles few-flowered, in pairs, terminal; one very remote, axillary: nut globose, acutish, transversely rugose.

durum, ovate, hard, sub-striate, obscure, black. On the dried stems of large herbs in autumn and winter. Tuber.

21—1. SCOLOPENDRIUM. 55. 5.

officinarum, W. (1) (caterpillar fern. W. Ju. 2f.) frond broad-lanceolate, cordate at the base: stipe chaffy. 8—10 i. Blechnum.

13—2. SCROPHULARIA. 40. 40.

marylandica, (2) (fig-wort. O. g-p. Ju. 2f.) leaves cordate, serrate, acute roundish at the base; petioles ciliate below: fascicles of the panicle lax, few-flowered. 3—7 f. *S.*

lanceolata, Ph. (E. g-y. Au. 2f.) leaves lanceolate, unequally serrate, acuminate, acute at the base: petioles naked: fascicles of the panicle corymbed. 3—5 f. *S.* Bignonia.

13—1. SCUTELLARIA. 42. 39.

lateriflora, (mad-dog scull-cap, hood-wort. O. b. Ju. 2f.) branching, glabrous: leaves long-petioled, ovate, toothed; cauline ones sub-cordate: racemes lateral, leafy. Damp. 1—2 f. *S.*

galericulata, (scull-cap. O. b. J. 2f.) branching: leaves sub-sessile, lance-ovate, sub-cordate at the base, crenate, a little white-downy beneath: flowers axillary, solitary or in pairs. Flowers large. Damp. 12—18 i.

gracilis, N. (E. b. J. 2f.) stem sub-simple: leaves remote, broad-ovate, toothed, smooth, sessile, scabrous on the margin; upper ones smaller, entire: flowers axillary. Resembles the last. 12—18 i.

parvula, Mx. (w-b. J. 2f.) small, simple, densely pubescent: leaves sessile, ovate, entire: flowers axillary, solitary. 2 i. *S.*

integrifolia, (E. b. Ju. 2f.) somewhat simple, densely pubescent: lower leaves ovate, crenate, tapering to the base; upper ones lance-linear, obtuse, entire, sessile: racemes lax-flowered, leafy. Var. *hyssopifolia*, has the leaves all linear. 1—2 f. *S.*

pilosa, Mx. (3) (E. b. J. 2f.) nearly simple, pubescent: leaves remote, rhomb-ovate, obtuse, round-crenate, rugose, petioled: lower ones sub-cordate: racemes panicled: flowers crowded: bracts lanceolate, entire. 18—24 i. *S.*

canescens, N. (W. b. 2f.) branching: leaves ovate, acute, acutely toothed, petioled, hoary-villose beneath; lower ones sub-cordate: racemes axillary and terminal, pedicelled, sub-panicled: bracts lance-ovate, longer than the calyx: bracts and flowers hoary-villose. 2—3 f. *S.*

ovalifolia, P. (b. J. 2f.) leaves sessile, ovate or sub-oval, serrate; upper ones lanceolate, sub-entire.

cordifolia, M. (4) (E. b. w. Au. 2f.) leaves broad-cordate, acute, obtusely toothed; petioles long: racemes opposite and terminal: bracts ovate, acuminate: stem branching. 2—3 f. *S.*

Southern.

nervosa, Ph. (E. b. Au. 2f.) nearly simple, glabrous: leaves sessile, ovate, toothed, nerved: raceme terminal, lax, leafy.

angustifolia, Ph. (W. J. 2f.) simple, finely pubescent: leaves linear: flowers axillary, opposite: stamens sub-exsert.

caroliniana, Lk. (E. 2f.) branching, very glabrous: leaves petioled, lance-linear, acute, entire: racemes lax, leafy: calyx obtuse.

serrata, Ph. (E. b. Ju. 2f.) branching, pubescent: leaves ovate, acuminate, serrate, short-petioled: racemes terminal, lax, often panicled: bracts lanceolate, short.

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(1) Asplenium scolopendrium, L. (2) nodosa. Var. americana, Mx. (3) caroliniana, Wr. (4) versicolor, N. ?

villosa, E. (E. J.) stem erect, branching, villose : leaves large, lanceolate, acute at each end, coarse-toothed, villose beneath, hispid above: racemes panicled : flowers crowded. 2—3 f.

ambigua, N. (W. w-b. 2f.) low, sub-decumbent, divaricate, branched : leaves sessile, ovate, rarely remotely serrate, sub-hirsute above : flowers small axillary. Var. *missouriensis*, leaves ovate-oblong ; lower ones ovate, short-petioled ; all entire. 4—6 i.

resinosa, T. & J. (W. b.) minutely glandular-pubescent, very branching : leaves ovate, very obtuse, abruptly narrowed at the base, very entire, sprinkled on each side with resinous dots : flowers axillary, villose.

Trichostema.

3—2. SECALE. 4. 10.

cereale, (rye. J. ♂.) glumes and bristles scabrous-ciliate : corol smooth. Introduced. Sesleria.

10—5. SEDUM. 13. 83.

ternatum, Mx. (false ice-plant. W. w. J. 2f.) small, creeping : leaves flat, round-spatulate, ternate : flowers somewhat 3-spiked. Varies into the eighth class. Cultivated. *S.*

telephioides, Mx. (E. p. Ju.) leaves broad-lanceolate, acute at each end, dentate : corymbs many-flowered. 1 f. *S.*

Exotic.

telephium, (orpine, live-forever. r. w. Ju. 2f.) leaves flattish, tooth-serrate, thickly scattered : corymb leafy : stem erect.

anacampseros, (stone-crop. 2f.) leaves wedge-form, entire, sub-sessile : stem decumbent : flowers corymbed.

Southern.

pulchellum, Mx. (E. p.) glabrous : stems assurgent : leaves scattered, linear, obtuse : cyme many-spiked : flowers sessile, octandrous.

pusillum, Mx. (1) (E. w. Ju. 2f.) erect, glabrous : leaves alternate, nearly terete, oblong : flowers sub-terminal, few, alternate, sub-pedicelled. 2—4 i.

stenopetalum, Ph. (W. y. Ju. 2f.) glabrous, stems ascending : leaves scattered and crowded, adnate-sessile, compressed-subulate, acute : cyme terminal, thrice dichotomous : spikes recurved : flowers sessile, decandrous : petals linear, much longer than the calyx.

nuttallii, T. & J. (W.) leaves roundish, flat, entire, scattered : cymes terminal, trichotomous.

lanceolatum, T. & J. (W. w. ?) leaves flat, sub-alternate ; lower ones crowded, lance-oblong, acutish, glabrous, with the margin glandular-serrulate : stem branching, assurgent : flowers cyme-corymbed : petals lanceolate, spreading.

rhodiola, Dc. (2) (W. g. y. 2f.) erect, simple : leaves imbricate, sessile, obovate, acute, fleshy, glaucous, toothed above : cymes terminal, branching. 8 i. Lychnis.

14—1. SELENIA. 39. 63.

Southern.

aurea, N. (W. y. ☼.) stem glabrous, sub-divided at the base, acute-triangular : leaves smooth, somewhat succulent ; radical ones sub-bipinnatifid, sessile : pedunculs axillary angular. 4—6 i. Dentaria.

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(1) Diamorpha, N. and Tillaea cymosa of the same. (2) Rhodiola rosea, L.

Selinum, CNIDIUM.

12—13. SEMPERVIVUM. 13. 83.

Exotic.

tectorum, (houseleek. Au. 2f.) leaves ciliate : bulbs spreading : nectaries wedge-form, crenulate.

arboreum, (tree houseleek.) stem woody, smooth, branching : leaves wedge-form, glabrous, with soft spreading hairs. Adonis.

17—2. SENECIO. 49. 55.

1. *Florets tubular : rays none.*

Remark. The three first species vary from the character of the section under which the genus is placed ; being destitute of rays.

vulgaris, (groundsel. E. y. J. 2f.) leaves mostly clasping, sinuate-pinnatifid, toothed : flowers panicled : stem erect, branched. Perhaps introduced. 12—20 i.

hieracifolius, (fire-weed. O. w. J. ☼) stem wand-panicled : leaves clasping, oblong, acute ; deeply, acutely, and unequally toothed : calyx smooth, bristly at the base. This plant springs up wherever land has been recently cleared of timber, and more particularly if it has been burned over. 4—8 f. *S.*

elongatus, Ph. (long-stem groundsel. E. Ju. 2f.) glabrous : radical leaves spatulate, serrate, tapering into the petiole ; cauline leaves pinnatifid, toothed, very remote : peduncles elongated, corymb-umbelled.

pauciflorus, Ph. (E. 2f.) glabrous : radical leaves long-petioled, roundish-ovate, sub-cordate, toothed ; cauline ones 2, remote, pinnatifid, toothed : peduncles short, somewhat in 3's, umbelled. Labrador. 8 i.

2. *Flowers with ray florets.*

pauperculus, Mx. (2f.) stem very simple, rigidly erect, nearly naked : leaves lanceolate ; radical ones sub-entire and gash-toothed : corymb few-flowered : calyx smooth : rays small.

gracilis, Ph. (E. M. 2f.) radical leaves very long-petioled, orbicular, sub-cordate, crenate ; cauline ones few, very remote, linear-oblong, dilated at the base, gash-toothed : peduncles very short, hirsute, sub-umbelled : calyx smooth : rays few, very short. 1 f.

obovatus, (E. y. M. 2f.) radical leaves obovate, crenate-serrate, petioled ; cauline ones pinnatifid, toothed : flowers sub-umbelled, long-peduncled : stem somewhat glabrous. *S.*

balsamitæ, (balsam groundsel. E. y. J. 2f.) radical leaves oblong, serrate, petioled ; cauline ones lyrate or pinnatifid : flowers sub-umbelled : stem and peduncles villose at the base. 1—2 f. *S.*

aureus, W. (rag-wort. O. y. J. 2f.) radical leaves ovate, cordate, serrate, petioled ; cauline ones pinnatifid, toothed, terminal division lanceolate : peduncles sub-umbelled, incrassate. 18—24 i. *S.*

cymbalaria, Ph. (W.) radical leaves roundish, petioled, truncate at the base, toothed : petioles appendaged, sub-lyrate ; cauline ones sessile, linear, gash-toothed : stem about 1-flowered. Perhaps a variety of the last.

canadensis, W. (E.) leaves doubly pinnate, linear, glabrous ; uppermost ones simply pinnate : flowers in compound, fastigiate corymbs.

Southern.

ciliatus, Wr. (E. w.) stem pilose : leaves lance-linear, ciliate.

tomentosus, Mx. (E. M. 2f.) hoary and woolly : stem simple : leaves petioled, lance-oval, serrulate : corymb sub-umbelled. 2 f.

fastigiatus, Sz. (E. y.) radical leaves oblong, heart-ovate, crenate-toothed, glabrous ; cauline ones pinnatifid, divisions gash-toothed : flowers sub-umbelled : peduncles and calyx glabrous. 2—3 f.

lobatus, P. (E. y. M. ☼.) glabrous : leaves lyrate-pinnatifid ; lobes round, sub-repand : corymb compound ; upper peduncles sub-umbelled. I—3 f.
integerrimus, N. (W. y. J.) smooth : stem simple, slender : leaves very entire ; radical ones long-petioled, lanceolate, acute ; cauline ones sessile, acuminate ; highest ones minute : corymb simple : peduncles 1-flowered : rays shorter than the hemispheric, calycled calyx. Damp. 12—18 i. Cineraria

Senecio, CACALIA, CINERARIA.

20—9. SERPICULA. 15. 88.

canadensis, Mx. (1) (ditch moss. O. w. Ju. 2ℓ.) perfect flowers triandrous : stigmas strap-like, reflexed, 2-cleft : leaves linear, acute, somewhat whorled, glabrous, denticulate. The pistillate corols are tubular. *S.* Hydrocharis.

13—2. SESAMUM. 40. 45.

Exotic.

indicum, (bene-benni, oily-grain. r-w. Au. ☼.) leaves lance-ovate ; lower ones 3-lobed ; upper ones undivided, serrate. 2—4 f. Digitalis

16—10. SESBANIA. 32. 93.

Southern.

vesicaria, Jn. (2) (E. y. Au.) leaves equally pinnate ; leafets (10—20 pairs,) oblong, obtuse, glabrous : racemes few-flowered, shorter than the leaves : loment lanceolate, long stiped, about 2-seeded. 5—7 f.
macrocarpa, M. (O. y. & p. S. ☼.) leaves equally pinnate ; leafets (10—25 pairs,) oval, glabrous, sub-glaucous beneath : racemes axillary, few-flowered : legumes elongated, nearly terete. 4—12 f. Amorpha.

5—2. SESELI. 45. 60.

Southern.

triternatum, Ph. (W. y. M. 2ℓ.) leaves tri-ternate ; leafets long-linear : umbels hemispheric : involucels many-leaved, with the leafets linear as long as the umbels.
divaricatum, Ph. (W. y. M. 2ℓ.) stem very branching, divaricate : leaves bipinnatifid : divisions lanceolate, gashed : umbels long-peduncled : involucre none ; involucel linear, dimidiate ? 4—6 i. Viburnum.

3—2. SESLERIA. 4. 10.

Southern.

dactyloides, N. (moor grass. W. g.) culm setaceous, leafy : leaves short, flat, subulate, sub-pilose : stipules bearded : spikes 2—3, few-flowered : corol and 2-flowered calyx acuminate, entire. 4—5 *i*. Oxydenia.

11—5. SESUVIUM. 13. 87.

sessile, Dc. (3) (L. r. Ju.) flowers sessile : leaves linear-oblong, flat.

Southern.

pentandrum, E. (L. Au.) leaves lance-linear, obtuse, succulent : flowers solitary, closely sessile, pentandrous. The descriptions of the sessile are too short to enable me to determine whether this is the same. Elliott.

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(1) occidentalis, Ph. verticillata, M. Elodea, Mx. Udora, N. (2) platycarpa, P. disperma, Ph. Robinia, Jn. Aischynomene platycarpa, Mx. (3) Gerardia cassioides, Ph. afzelia, Mx.

pedunculatum, Dc. (L. w. Au.) leaves lance-linear, obtuse, succulent: flowers solitary, axillary, peduncled, polyandrous. Aronea.

Setaria, PENNISETUM.

13—2. SEYMERIA. 40. 40.

Southern.

tenuifolia, Ph. (1) (E. y. & p. Au. ☼.?) glabrous, very branching: leaves compound-pinnatifid; segments filiform, opposite and alternate: corol sub-rotate: capsule glabrous. 3—4 f.

pectinata, Ph. (E. y. S. ☼.?) viscid-pubescent, very branching: leaves pectinate-pinnatifid: divisions undivided, acute, linear: corol sub-rotate: capsule pubescent. 2—4 f.

macrophylla, N. (W. y. Ju.) branching: leaves smoothish; lower ones sub-pinnatifid or deeply toothed; upper ones lanceolate, entire: orifice and tube of the corol densely lanuginous: stamens scarcely exserted. 4—5 f. Bunias.

Shepperdia, HIPPOPHAE.

5—5. SIBBALDIA. 35. 92.

procumbens, (A. y. Ap. 2ℓ.) leaves ternate: leafets wedge-form, 3-toothed, smooth above, hairy beneath.

Southern.

erecta, Var. *parviflora*, (W. r-w. Ju. ♂.) erect, branching: radical leaves about twice 3-cleft: segments sub-divided: cauline leaves alternate, sessile, sub-bipinnatifid. 4—6 i. Drosera.

19—16. SICYOS. 34. 97.

angulata, (single-seed cucumber. O. w. Ju. ☼.) leaves cordate, with obtuse hind lobes, 5-angled, scabrous, denticulate: fruit capitate, hispid. Cultivated. River alluvion. *S.* Cucumis.

15—12. SIDA. 37. 74.

spinosa, (E. y. Ju. ☼.) stem spreading: axils sub-spinose: leaves long petioled, lance-ovate, obsoletely cordate, toothed: peduncles solitary, axillary: stipules setaceous, longer than the peduncle: capsule 2-beaked. 1—2 f. *S.*

abutilon, (indian mallows. E. y. Ju. ☼.) leaves round-cordate, acuminate, toothed, tomentose: peduncles solitary, shorter than the petioles: capsules 2-awned, truncate. 4—6 f. *S.*

napaea, (2) (false mallows. w. Ju. 2ℓ.) leaves heart-5-lobed, glabrous: lobes oblong, acuminate, toothed: peduncles many-flowered: capsules awnless, acuminate. 2—4 f. *S.*

dioica, (3) (P. w. Oc. 2ℓ.) leaves 7-lobe-palmate, scabrous: lobes lanceolate, gash-toothed: corymbs bracted: flowers dicœcious.

Southern.

hispida, Ph. (E. y. Au. 2ℓ.) hispid-pilose: leaves lanceolate, serrate: peduncles solitary, axillary, as long as the petioles: outer calyx filiform. 1—2 f.

rhombifolia, (E. y. Au. 2ℓ.) leaves lance-oblong, toothed, wedge-form and entire at the base: peduncles much longer than the petioles: capsules 2-horned. 1—2 f.

crispa, (L. w. Au. ☼.) leaves oblong-cordate, acuminate, crenate; upper ones sessile: peduncles solitary, longer than the petioles, deflected when in fruit: capsules inflated, awnless, crisp-undulate.

alcaeoides, Mx. (W. Ju. 2ℓ.) lower leaves triangular-cordate, gashed; upper ones palmate-many-cleft: corymb terminal: calyx hispid.

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(1) Gerardia cassioides, Ph. afzelia, Mx. (2) Napaea laevis, 4th Ed. (3) Napaea scabra, 4th Ed.

gracilis, E. (E. y. Au. 2[.) stem slender, glabrous: leaves linear serrate: peduncles solitary, axillary, as long as the petioles: capsules (10,) 2-horned, glabrous. 2—3 f.

stellata, T. & J. (W. r.) densely stellate-pubescent: leaves lanceolate, acute, erose-serrate, rugose: pedicels axillary, shorter than the petiole, 3—5-flowered: flowers in capitate glomerules: capsules (12—14,) bi-mucronate, 1—2-seeded, broader at the base, reticulate. Althaea.

17—2. SIEGESBECKIA. 49. 55.

flosculosa, W. (W. y. Au. ☼.) leaves sessile, ovate, toothed: florets of the disk 3-toothed, triandrous.

Southern.

laciniata, Lk. (E.) leaves gash-pinnatifid; upper ones lanceolate, entire, tuberculate: outer calyx short: florets of the ray very large. Zinnia.

10—3. SILENE. 22. 82.

pennsylvanica, Mx. (1) (pink catch-fly. E. r. J. 2[.) viscid-pubescent: lower leaves wedge-form; upper leaves lanceolate: stems few-flowered at the summit: about 3 petals, obtuse, slightly emarginate, sub-crenate. 6—10 i. *S.*

virginica, Mx. (2) (W. r. J. 2[.) decumbent, wholly viscid-pubescent: leaves oblong, a little rough at the margin: panicle dichotomous: petals 2-cleft: stamens and pistils exsert. Var. *erecta*, has the stem erect: flowers sub-fascicled. Sandusky bay. 12—18 i. *S.*

antirrhina, (sleepy catch-fly. O. w-p. J. ☼.) leaves lanceolate, subciliate: peduncles 3-parted: petals emarginate: calyx ovate. Flowers small. 1—2 f. *S.*

nocturna, (w. J. ☼.) flowers alternate sessile, on a one-sided spike: petals 2-cleft. *S.*

acaulis, (E. r. Ju. 2[.) stemless, depressed: leaves linear, keeled: peduncles terminal, solitary, erect, 1-flowered: petals emarginate. Labrador. *S.*

Exotic.

armeria, (garden catch-fly. w-r. Au. ☼.) flowers fascicled, fastigiate: upper leaves cordate, glabrous: petals entire.

conica, (cone-fruit catch-fly. r. ☼.) calyx of the fruit conic, striate: (about 30 striae) leaves soft, lanceolate: petals bifid. Flowers small.

dichotoma, (forked catch-fly. w. Au. ♂.) calyx ovate, viscid-hairy, erect: petals 2-cleft: racemes in pairs, terminal, one-sided: flowers intermediate, peduncled: leaves petioled, lance-ovate, ciliate at the base.

noctiflora, (night-flowered catch-fly.) calyx 10-angled, veiny: teeth of the tube equal: stem dichotomous: petals-bifid.

Southern.

quinquevulnera, (E. r. Ju. ☼.) hirsute: leaves wedge-oblong; upper ones linear: petals roundish, entire: fruit erect, alternate. 8—12 i.

ovata, Ph. (E. r-w. J. 2[.) leaves lance-ovate, acuminate, smoothish: raceme terminal, compound: calyx ovate: stamens and styles exsert: stem simple.

fimbriata, Bald. (E. w. M.) stem pubescent: leaves obovate ciliate: petals large, fimbriate. 6—8 i.

regia, (W. r. J. 2[.) pulverulent-viscid-pubescent: leaves broad-ovate, opposite, somewhat scabrous: calyx long-cylindric: petals oblanceolate, generally entire: style and stamens exsert. 2—3 f.

rotundifolia N. (W. r. Ju.) decumbent: stem, calyx and margin of the leaves very pilose: leaves broad-oval, acuminate at each end: flowers few, trichotomal: petals gashed, sub-4-cleft, lateral segments shorter.

baldwynii, N. (E. r.) flowers large, trichotomal: petals divaricate-gashed: stem, calyx and sub-lanceolate leaves pilose. A variety of the virginica?

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(1) virginica, W. caroliniana, Wr. (2) catesbæi, Wr.

axillaris, (1) (E. p. Au.) viscid-pubescent: stem branching: leaves ovate and oval, petioled, sub-dentate: flowers sessile, axillary, solitary. 8 i.
Stellaria.

17—4. SILPHIUM. 49. 55.

perfoliatum, (ragged cup. A. y. Au. 2f.) stem 4-sided, smooth: leaves opposite, connate, ovate, serrate. Var. *conjunctum*, four outer scales of the calyx longer than the inner scales. 4—6 f. *S.*

integrifolium, Mx. (A. y. Au. 2f.) stem 4-sided, rough: leaves opposite, sessile oblong, entire, scabrous: flowers few, short-peduncled. 4 f. *S.*

trifoliatum, (2) (y. S. 2f.) stem 6-angled, smooth: leaves whorled, in threes, lance-ovate, unequally tooth-serrate, scabrous above; upper ones sessile: panicle trichotomous. 4—6 f. *S.*

ternatum, (y. Ju. 2f.) stem terete, smooth: leaves whorled in threes, petioled, lanceolate, sub-denticulate, a little scabrous, ciliate at the base; the upper ones scattered, sessile: panicle dichotomous: calyx ciliate. 4—6 f. *S.*

Southern.

gumniferum, E. (E. y. Ju. 2f?) stem erect, hispid, gumniferous: leaves sinuate-pinnatifid, sub-hispid beneath: flowers large, axillary, sub-sessile: scales of the calyx ovate, acuminate, hispid on the margin. 2—3 f.

laciniatum, (O. y. Au. 2f.) stem hispid above: radical and cauline leaves pinnatifid: divisions tooth-sinuate: flowers panicled: scales of the calyx sub-cordate, acuminate. 8—12 f.

pinnatifidum, E. (E. y. Au.) stem nearly glabrous: leaves sinuate pinnatifid, sub-scabrous, a little hairy beneath: scales of the calyx oval; outer ones roundish. 4—6 f.

compositum, (E. y. Ju. 2f.) stem smooth: cauline leaves pinnatifid-sinuate; radical ones ternate, sinuate-many-cleft: flowers small, panicled. 2—4 f.

terebinthinaceum, (O. y. Ju. 2f.) stem smooth: radical leaves large, round or reniform-cordate, slightly lobed and toothed: cauline leaves alternate, ovate, serrate, scabrous: panicle compound, many-flowered. 4—5 f.

connatum, (A. y. Au. 2f.) stem terete, hispid; leaves opposite, connate, remotely serrate, scabrous. 6 f.

laevigatum, Ph. (E. y. Au. 2f.) stem simple, 4-angled, furrowed, glabrous: leaves opposite, sessile, ovate, acuminate, slightly serrate, sub-cordate at the base, glabrous on both sides. 2 f.

scaberrimum, E. (E. y. Au.) stem sub-angled; angles rough above: leaves ovate, sub-acuminate, serrate, rigid, scabrous on both sides, short petioled: flowers corymbed: scales of the calyx ovate, ciliate. 3—4 f.

atropurpureum, Retz. (E. y. Au. 2f.) stem terete, smooth: leaves whorled in fours, lanceolate, scabrous, sub-entire, sub-sessile, ciliate at the base; upper ones scattered: panicle dichotomous. 4 f.

dentatum, E. (E. y. Au.) stem erect, somewhat glabrous: lower leaves opposite; upper ones alternate; all lanceolate, sinuate-toothed, pilose, scabrous: flowers corymbed: scales of the calyx broad-ovate, ciliate. 2—3 f.

asteriscum, (E. y. Ju. 2f.) stem simple, terete, hispid: leaves opposite or alternate, oblong, acute, serrate, scabrous: flowers few, generally solitary. Var. *scabrum*, leaves lance-oblong, sub-crenate, sessile, scabrous: calyx sub-ciliate. 2—3 f.

pumilum, Mx. (3) (E. y. Au. 2f.) stem and petioles tomentose: branches 1-flowered: leaves alternate, heart-ovate, serrate, petioled, white-tomentose beneath: seeds unawned. 2—3 f.

elatum, Ph. (E. y. 2f.) leaves alternate, petioled, cordate, sinuate: scales of the calyx obtuse.

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(1) of M. C. Leavenworth. (2) ternifolium, Mx. (3) tomentosus, Ph.

reticulatum, Ph. (E. y. 2f.) leaves alternate, lance-ovate, cordate, serrate, obtusish, a little villose.
subacaule, N. (E. y.) somewhat scabrous: stem very short: peduncles very long: leaves oblong, sub-sinuate-pinnatifid, toothed: divisions of the calyx dilated, rhomboid. Polymnia.

14—2. Sinapis. 39. 63.

Exotic.

nigra, (common mustard. y. J. ☼.) silique glabrous, 4-angled, close-pressed to the stem: leaves at the top lance-linear, entire, smooth. Naturalized.
alba, (yellow-seed mustard. y. ☼.) silique bristly, rugged, shorter than the 2-edged beak: leaves pinnatifid; upper ones sub-lyrate, all irregularly toothed. Seeds large, pale-yellow, and sometimes become blackish. Brassica.

5—2. Sison. 45. 60.

aureus, (1) (meadow parsnip, false alexanders. O. y. J. 2f.) leaves biternate; leafets lance-oval, serrulate: umbels with short peduncles. Some of the leaves are often quinate. 1—2 f. *S.*
integerrimus, (2) (O. y. 2f.) very glabrous: leaves sub-glaucous; lower ones thrice ternate; upper ones doubly ternate; leafets oval, entire: umbels with elongated peduncles. 12—18 i. S.
capillaceus, (3) (E. w. Au. ☼.) leaves decompound, filiform: stem dichotomous, angular: involucre sub-pinnatifid. 1 f. *S.*

Southern.

trifoliatus, Mx. (E.) leaves ternate; leafets toothed; lower ones oval, 2—3-lobed; upper ones lance-oval: umbel terminal, solitary, peduncled: seed roundish.
pusillus, P. (4) (E. Ap. ☼.) leaves triternate, many-parted: umbels few-flowered: (5—6,) seed muricate. 1—2 f.
costatus, E. (5) (E. Oc. ☼.?) large: stem simple below: leaves capillary-many-parted; segments sub-verticillate: seeds ribbed. 4—5 f. Ligusticum.

Sison, Œnanthe.

21—6. Sistotrema. 58. 1.

cinereum, imbricate, sub-erose: pileus halved, hirsute, cinereous beneath. On trunks of trees, &c.
violaceum, halved, imbricate, tomentose, white, becoming purple-violet beneath. On trees.
quercinum, glabrous, pale, somewhat reddish-yellow: teeth thick, deformed, gashed, somewhat close-pressed. On dry oak branches, &c.
cerasi, small, orbicular, gibbose, pale, downy at the margin: teeth various, thick, close-pressed. On branches and roots. Hydnum.

14—2. Sisymbrium. (6) 39. 63.

officinale, (hedge mustard. O. y. J. ☼.) siliques close-pressed to the rachis of the spike: leaves runcinate. 1—3 f. *S.*
canescens, N. (7) (y. Ap. ☼.) leaves bipinnatifid, hoary; divisions toothed, obtuse, sometimes obovate: petals as long as the calyx: siliques sub-angled, ascending, shorter than the peduncle. 1—2 f. *S.*

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(1) Smyrnium, L. Thaspium, N. (2) Smyrnium, L. (3) Ammi, Mx. (4) Ligusticum, P. Ammi divaricatum, of the same. (5) Ammi, E. (6) Erysimum of Authors. (7) sophia, Ph. not L.

Southern.

cheiranthoides, (1) (O. y. J. ☼.) siliques erect: fruit-bearing pedicels spreading: leaves lanceolate, sub-entire. Erysimum.

Sisymbrium, ERYSIMUM.

15—3. SISYRINCHIUM. 6. 18.

anceps, Cav. (2) (blue-eyed grass. O. b. J. 2|.) scape (or culm) simple, 2-edged or 2-winged: glume-like spathe of 2 unequal valves, extending above the flower: petals mucronate. 6—12 i. *S.*

mucronatum, Mx. (E. b. J. 2|.) leaves and scape simple, sub-setaceous: spathe coloured, with one valve terminating in a long mucronate point. 9—12 i. *S.*

bermudianum, L. (E. b. J. 2|.) stem compressed, branching, leafy: spathes unawned, shorter than the flowers: petals mucronate. 12—18 i. *S.* Passiflora.

5—2. SIUM. 45. 60.

latifolium, (3) (water parsnip. O. w. Ju. 2|.) leaves pinnate; leafets oblong-lanceolate, equally serrate: stem erect, angular, hollow, smooth. Whenever any of the leaves grow under water, they are sub-divided. 1—3 f. *S.*

lineare, Mx. (E. w. Ju. 2|.) leaves pinnate; leafets linear, sub-lanceolate, acutely and finely serrate: involucres many-leaved, linear: umbels terminal. Probably a variety of the last. T.

Southern.

tricuspidatum, E. (4) (O. Ju.) leaves pinnate; lower leafets lanceolate; upper ones obovate, 3-toothed. 2—3 f.

nodiflorum, (E. w. J. ☼.) stem procumbent: leaves pinnate; leafets ovate: umbels axillary, sessile. Probably introduced. 2 f. Cicuta.

Sium, ŒNANTHE.

Smilacina, CONVALLARIA.

20—6. SMILAX. 11. 12.

1. *Stems woody.*

quadrangularis, M. (Ju. ♄.) stem prickly, 4-angled: leaves unarmed, ovate, acute, sub-cordate, 5-nerved. *S.*

sarsaparilla, (5) (J. ♄.) prickly: leaves unarmed, lance-ovate, cuspidate, sub-5-nerved, becoming glaucous beneath; the general peduncles longer than the petioles. *S.*

rotundifolia, (6) (green brier. O. w-g. J. ♄.) prickles scattered: leaves (when in maturity) round-ovate, acuminate, slightly cordate, 5-nerved: berry spherical. *S.*

caduca, (E. Can. J. ♄.) prickly: leaves ovate, mucronate, 5-nerved, membranaceous: general peduncles scarcely longer than the petioles. *S.*

pseudo-china, (E. M. ♄.) unarmed in all parts: cauline leaves cordate; ramose ones oblong-ovate, 5-nerved: peduncles very long. *S.*

laurifolia, (E. Ju. ♄.) prickly: branches unarmed: leaves oval or lance-oval, leathery, recurve-prickly, 3-nerved, perennial: umbels short-peduncled. *S.*

tamnoides, (Ju. ♄.) stem prickly, terete: leaves ovate-oblong, acute, sub-panduriform, obsoletely cordate, 5-nerved: common peduncle longer than the petiole. *S.*

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(1) parviflora, P. (2) bermudianum, Mx. gramineum, Lk. (3) denticulatum, E.? (4) rigidius, Wr. not L. (5) glauca, Mx. (6) quadrangularis, W.

2. *Stems herbaceous.*

pedunculàris, (jacob's ladder. E. w-g. M. 2[.) stem terete, climbing or arching over: leaves round-ovate, cordate, acuminate, about 9-nerved: (sometimes but 7) umbels long-peduncled. Damp. 2—3 f. *S.*

herbàcea, (E. g. J. 2[.) stem angled, erect, simple: leaves long-petioled, oval, about 7-nerved: umbels with long compressed peduncles: berries depressed, globose. Damp. 2—3 f. *S.*

Southern.

hastàta, W. (E. Ju. ♄.) stem angled, prickly: branches unarmed: leaves lanceolate, acuminate, hastate-auricled at the base, 3-nerved, prickly-ciliate on the margin. Var. *lanceolàta*, leaves long, narrow, lanceolate.

bona-nox, (E. Ju. ♄.) stem unarmed, angled: leaves heart-ovate, acute, 7-nerved, prickly ciliate.

walteri, Ph. (E. Ju. ♄.) prickly: leaves heart-ovate, smooth, 3-nerved: berries acuminate.

ovàta, Ph. (E. Ju. ♄.) generally unarmed: leaves unarmed, ovate, acute, cuspidate, 3-nerved, both sides coloured alike: common peduncle shorter than the petiole.

lanceolàta, (E. J. ♄.) unarmed: leaves lanceolate and ovate, acute or acuminate, 3—5-nerved, very glabrous, perennial: umbels many-flowered: peduncles short.

alba, Ph. (E. J. ♄.) generally unarmed: stem obsoletely angled: leaves lanceolongated, coriaceous, glabrous, very entire, 3-nerved: umbels few-flowered, very short-peduncled.

pumila, Wr. (1) (E. S. ♄.) unarmed: leaves heart-ovate, entire, somewhat 5-nerved, soft-pubescent beneath: umbels short-peduncled: pedicels very short: berries oblong, acute: stem procumbent.

cinciniifolia, Ph. (E. ♄.) prickly: leaves unarmed, round-cordate, acuminate, 5-nerved, glabrous on both sides, net-veined, short-petioled.

Dioscorea.

5—2. SMYRNIUM. 46. 60.

cordàtum, Wr. (2) (Alexanders. O. y. J. 2[.) radical leaves round-cordate, crenate: cauline ones petioled, ternate; uppermost ones 3-parted: umbels with short petioles. 12—18 i. *S.* Œnanthe.

Smyrnium, SISON, CNIDIUM.

5—1. SOLANUM. 28. 41.

dulcamara, (bittersweet. E. p-b. Ju. ♄.) stem unarmed, woody, climbing; lower leaves mostly cordate, glabrous; upper ones mostly guitar-hastate, few-flowered; corymbs opposite to leaves. This is the true bittersweet; but the Celastrus scandens is wrongly called so by some. Damp.

nigrum, (deadly nightshade. O. w. p. b. J. ☼.) stem unarmed, erectish or erect; branches angled, dentate: leaves ovate, repand, glabrous: racemes 2-ranked, nodding. 1—2 f. *S.*

carolinense, (horse nettle. b. J. ☼.) stem prickly: leaves angular-hastate, covered with prickles both sides: racemes lax. 1—2 f. *S.*

Exotic.

tuberosum, (potato. b. w. Ju. ♄.) stem wing-angled, unarmed: leaves interruptedly pinnate; leafets entire: flowers sub-corymbed: roots knobbed-tuberous. Cultivated.

lycopersicum, (love apple, tomatoes. y. S. ☼.) stem unarmed: leaves pinnatifid, gashed: racemes 2-parted, leafless: fruit glabrous, torulose.

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(1) pubera, Mx. (2) trifoliatum, M. Thaspia, L.

melongena, (egg-plant. *J.* ☼) stem unarmed: leaves ovate, tomentose: peduncles pendant, incrassate: calyx unarmed.

pseudo-capsicum, (jerusalem cherry. ♄.) stem woody: leaves lanceolate, repand: umbels sessile.

Southern.

mammosum, (E. y. Ju. ☼.) stem prickly, herbaceous: leaves cordate, lobe-angled, villose on both sides, prickly.

virginianum, (E. b. Ju ☼.) stem erect, prickly: leaves pinnatifid, prickly on both sides: divisions sinuate, obtuse: margin ciliate: calyx prickly.

triflorum, N. (W. w. Ju.) stem unarmed, herbaceous, procumbent: leaves tooth-pinnatifid, smooth: divisions acute, sub-undulate: margin sub-revolute: peduncles opposite the leaves, 2—3-flowered. 1 f.

jamesii, T. (W. w. ? ☼.) herbaceous, somewhat pilose: stem unarmed, erect: leaves unequally pinnate; leafets lance-ovate, abruptly narrowed at the base, obsoletely sinuate: racemes few-flowered, a little out of the axils.

flavidum, T. & J. (W.) suffruticose, densely tomentose; branchlets and calyx prickly: leaves solitary, oblong, obtusish; lower ones repand-sinuate; upper ones obsoletely sinuate: racemes opposite the leaves, about 3-flowered.

verbascifolium, W. (E. ♄.) stem unarmed, fruticose: leaves ovate, tomentose, very entire: corymbs 2-cleft, terminal. Atropa.

Solea, IONIDIUM.

17—2. SOLIDAGO. (1) 49. 55.

1. *Flowers one-sided. Leaves with three combined nerves.*

canadensis, (canadian golden-rod. O. y. Ju. 2f.) stem downy: leaves lanceolate, serrate, rough: racemes copious panicled, recurved: rays hardly longer than the disk: stem angular: leaves sessile, three inches long, sometimes nearly entire. 2—5 f. *S.*

procera, A. (great golden-rod. O. y. Ju. 2f.) stem villose, erect: leaves lanceolate, serrate, rough, villose beneath: racemes spike form, erect, drooping before flowering: rays short. 4—7 f. *S.*

serotina, W. (smooth golden-rod. O. y. S. 2f.) stem erect, terete, smooth: leaves lance-linear, glabrous, serrate, rough-edged: racemes panicled: peduncles downy. The young leaves are edged with many little stiff white hairs.

gigantea, (giant golden-rod. O. y. Au. 2f.) stem erect, glabrous: leaves lanceolate, smooth, serrate, rough-edged, obscurely 3-nerved: racemes panicled: peduncles rough-haired: rays short. 4—7 f. *S.*

ciliaris, W. (fringed golden-rod. O. y. 2f.) stem erect, glabrous: leaves lanceolate, somewhat 3-nerved, glabrous, rough-edged, slightly serrate: racemes panicled: peduncle glabrous: bracts ciliate: rays short. The stem is angular: radical leaves petioled, oval, pointed, veiny, serrate, rough, near a foot long: branches of the panicle spreading: bracts minute.

reflexa, W. (hang leaf golden-rod. y. Au. 2f.) stem erect, villose: leaves lanceolate, sub-serrate, scabrous, reflexed: racemes panicled, very little one-sided, reflexed. *S.*

lateriflora, (side-flowered golden-rod. y. Au. 2f.) stem erect, a little hairy: leaves lanceolate, slightly 3-nerved, glabrous, rough-edged; lower ones sub-serrate: racemes panicled, a little recurved, sub-secund: flowers large, the rays being much longer than the calyx: stem striated, often purplish, pinnatifid, with numerous lateral flowering branches. 2—3 f. *S.*

(1) In this troublesome genus most of the extensive and accurate descriptions of President J. E. Smith are given. He took a review of Pursh and of all preceding writers, and then wrote, with specimens of almost every species before him.

2. Racemes or flowers one-sided. Leaves veiny.

aspera, A. (rough golden-rod. y. Au. 2f.) stem erect, terete, hairy: leaves ovate, somewhat oval, very rough, rugose, serrate: racemes panicled: leaves one to two inches long, acute: racemes dense, somewhat conic: ray-florets twice as long as the calyx. 3—4 f. *S.*

altissima, W. (variable golden-rod. O. y. Au. 2f.) stem erect, rough-haired: leaves lanceolate; lower ones deeply serrate, scabrous, rugose. The panicled racemes are very numerous and spread every way, so as to bring the one-sided flowers upwards: rays half as long again as the calyx. But this species is so variable, that students generally endeavor to make several species of it. The serratures of the leaves are equal and unequal: it is hairy or villose; and sometimes the racemes diverge but little. 3—6 f. *S.*

rugosa, W. (wrinkled golden-rod. O. y. Au. 2f.) stem erect, rough-haired: leaves lanceolate, scabrous, rugose; lower ones with close-pressed serratures: racemes panicled, very spreading. Leaves shorter and broader than the last, and the flowers a little smaller; like it very variable, and perhaps only one of its numerous varieties. 3—6 f. *S.*

scabra, W. (harsh golden-rod. O. y. Au. 2f.) stem erect, rough haired, furrowed: leaves oblong, tapering to both ends, acuminate, glabrous above, rugose, and scabrous beneath, along the middle close-pressed-serrate. 2—5 f. *S.*

nemoralis, A. (woolly golden-rod. E. y. Au. 2f.) stem erect, downy: cauline leaves lanceolate, hispid, entire; radical ones somewhat wedge-form, serrate: racemes panicled. Of a grey aspect. 1—3 f. *S.*

patula, M. (spread golden-rod. O. y. S. 2f.) stem erect, glabrous: leaves oval, serrate, glabrous; radical ones oblong-spatulate: racemes panicled, spreading: peduncles pubescent. Stem wand-like, angular and striate; stem-leaves sessile, about an inch long, pointed; the radical ones resemble those of the ox-eyed daisy: racemes about an inch long: flowers rather large. 2 f. *S.*

ulmifolia, M. (elm golden-rod. O. y. Au. 2f.) stem erect, glabrous, striate: leaves oval, deeply serrate, acuminate, villose beneath: radical ones obovate: racemes panicled: peduncles villose: rays short. Radical leaves resemble those of the last species, and are hairy both sides, some of the rest are oblong-ovate and only villose near the veins beneath; the petioles are bracted. 3—4 f. *S.*

arguta, A. (sharp-notch golden-rod. O. y. S. 2f.) stem erect, glabrous: leaves glabrous, sharply and unequally serrate; cauline ones oval, radical ones oblong-ovate: racemes panicled: rays elongated. 2—3 f. *S.*

juncea, (rush-stalk golden-rod. E. y. Au. 2f.) stem erect, glabrous: leaves lanceolate, glabrous, rough-edged; lower ones serrate: racemes panicled. Stem brownish, somewhat angular and striate, leafy; racemes a finger's length, dense, recurved-spreading: compound pedicels roughish, bracted: ray twice as long as the calyx. 2—3 f. *S.*

elliptica. W. (1) (oval-leaf golden-rod. y. Au. 2f.) stem erect, glabrous: leaves oval, smooth, serrate: racemes panicled: rays of middling length. 2—4 f. *S.*

asperata, Ph. (2f.) stem corymb-panicled: racemes erectish: flowers ascending: leaves lanceolate, serrate, scabrous. Described by Pursh from dried specimens.

recurvata, W. (curved golden-rod. y. S. 2f.) stem erect, pubescent: leaves lanceolate, serrate, rough-edged: racemes elongated, recurved-panicled. *S.*

sempervirens, (narrow-leaf golden-rod. y. S. 2f.) stem erect, glabrous: leaves lanceolate, somewhat fleshy, smooth, entire, rough-edged: racemes panicled: peduncles hairy: stem tall, purplish, a little glaucous: leaves many, narrow, long: ray florets long, narrow, rather numerous. 3—5 f. *S.*

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(1) latissimifolia, Miller.

odora, W. (sweet-scented golden-rod. O. y. Au. 2f.) stem erect, pubescent: leaves lanceolate-linear, entire, glabrous, rough-edged: racemes panicled. The upper part of the stem is furrowed: racemes 2 or 3 inches long, spreading horizontally, each generally accompanied by a leaf: bracts oblong, smooth: stalk angular and rough. This is the true golden-root tea plant. 3 f. *S.*

3. *Racemes erect.*

speciosa, N. (E. y. S. 2f.) stem tall, smooth; branches virgate: leaves lanceolate, sub-coriaceous, scabrous on the margin: lower ones sparingly serrate: racemes erect, compound: peduncles pubescent: florets of the ray five, long: seed glabrous. 3—6 f. *S.*

virgata, Mx. (y. Au. 2f.) stem simple, smooth: leaves lanceolate, somewhat wedge-shape, obtuse, entire, glabrous, close-pressed: upper ones gradually smaller: branches of the panicle elongated, with terminal clusters: peduncles smooth, one-sided. Slender. 2 f. *S.*

bicolor, (white golden-rod. O. w. Au. 2f.) stem hairy: leaves oval, hairy; lower ones serrate; those on the flower branches entire, numerous and small: scales of the calyx obtuse. Racemes are short and compact: rays white, somewhat numerous and shortish; disk-florets rather numerous. 2—4 f. *S.*

petiolaris, W. (late golden-rod. y. Oc. 2f.) stem erect, villose: leaves oval, roughish, petioled: rays twice as long as the calyx. Stem branching, terete, hoary: leaves hoary about the ribs, over an inch in length, those covering the flower-branches sub-entire: racemes numerous, short, with few and rather large flowers. 2—3 f. *S.*

stricta, (willow-leaf golden-rod. E. y. Au. 2f.) stem erect, glabrous: cauline leaves lanceolate, entire, glabrous, rough-edged; radical leaves serrate: racemes panicled, erect: peduncles glabrous. The branches of the panicle are erect, simple, close. 2 f. *S.*

squarrosa, M. (y. 2f.) robust: stem erect, branching, pubescent: leaves smoothish: lower ones very broad, spatulate-oval, serrate, acute, margin scabrous; the upper ones sessile, lance-oval, entire: racemes compound, erect: calyx squarrose, many-flowered: ray florets long, (10 or 12.) 2—5 f. *S.*

graminifolia, (1) (grass-leaf golden-rod. O. y. S. 2f.) stem (rough-haired, Willd.) very furrowed, smoothish: leaves almost linear, (lance-linear, Willd.) entire, roughish, nearly erect, with 3 or 5 rough nerves: corymbs terminal, level-topped: flowers in heads: rays not longer than the disk. Stem leafy: leaves sessile, grass-green, about 2 inches long, and a quarter of an inch wide: flowers smallish: calyx ovate, smooth, shining, with tumid green-tipped scales. 4—5 f. *S.*

tenuifolia, Ph. (2) (pigmy golden-rod. E. y. S. 2f.) stem rough, angular, branched, corymbed: leaves spreading, linear, very narrow, slightly 3-nerved, scabrous, with axillary tufts of smaller ones: corymbs terminal, level-top: flowers in heads: rays scarcely exceeding the disk. Leaves very small and narrow. 1—2 f. *S.*

cæsia, W. (blue-stem golden-rod. O. y. Au. 2f.) stem nearly erect, very smooth and even: leaves lanceolate, glabrous, acuminate, with the margins and nerves roughish: rays rather longer than the disk. Stem upright, somewhat zigzag, branched, leafy: leaves about 2 inches long, sub-entire, sub-glaucous, paler beneath: racemes numerous, short, rough-pedicelled: bracts small, smooth, subulate. 2—3 f. *S.*

livida, W. (purple-stem golden-rod. y. S. 2f.) stem glabrous, panicled: leaves lanceolate, serrate, glabrous, rough-edged: branches racemed at the extremity: rays elongated. Stem branched, dark-purple: leaves tapering to both ends. *S.*

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(1) lanceolata, A. Chrysocoma, L. Euthamia, N. (2) lanceolata, Var. minor, Mx.

hispida, W. (O. y. Oc. 2f.) stem erect, hispid, scabrous: leaves lanceolate, rough, entire; radical ones serrate: rays of middling length. Resembles the cæsia. *S.*

lithospermifolia, W. (E. y. S. 2f.) stem branching, pubescent: leaves lanceolate, scabrous on both sides, tapering, 3-nerved, entire: ray-florets elongated. *S.*

puberula, N. (y. 2f.) stem simple, terete, sub-pubescent: leaves lanceolate, entire, slightly pubescent both sides, tapering to both ends; radical ones sub-serrate: racemes spiked, axillary, erect and condensed: peduncles pubescent: scales of the calyx lance-linear, acute: ray florets about 10, elongated. Stem brownish, simple pubescent. 1—2 f. *S.*

levigata, A. (flesh-leaf golden-rod. E. y. S. 2f.) stem erect, smooth: leaves lanceolate, fleshy, entire, smooth in every part: racemes panicled: peduncles scaly, villose: rays twice as long as the calyx. Tall, strong. Probably a variety of mexicana. Grows in salt marshes. 4—6 f. *S.*

limonifolia, P. (1) (y. S. 2f.) stem oblique, glabrous: leaves lanceolate, somewhat fleshy, entire, smooth on both sides: racemes panicled, erect: peduncles scaly, glabrous or sub-pubescent: ray-florets elongated. Stem generally purple: leaves somewhat clasping; lower ones a foot long. Wet. 3—5 f. *S.*

viminea, W. (2) (twig golden-rod. y. Au. 2f.) stem erect, sub-pubescent: leaves lance-linear, membranaceous, tapering to the base, glabrous, rough-edged; the lower ones sub-serrate: rays elongated. Peduncles and branches angular, and very rough: bracts lanceolate, recurved, smooth: flowers numerous. *S.*

macrophylla, Ph. (E. y. Au. 2f.) lower leaves ovate, acuminate, tapering, unequally and sharply serrate, glabrous: cauline leaves tapering to both ends, lanceolate, sub-sessile, serrate: racemes axillary, peduncled, leafy, of the length of the leaves: calyx oblong, turgid, many-flowered: rays somewhat elongated. Intermediate between this genus and the aster. 2—3 f.

flexicaulis, Ph. (zigzag golden-rod. O. y. Au. 2f.) stem zigzag, glabrous, angled: leaves lanceolate-acuminate, serrate, glabrous: racemes axillary: rays half as long again as the calyx. Stem slender, purplish, partly terete and partly angular: leaves numerous, on short broad petioles, hardly 2 inches long, and half an inch wide, paler beneath; the upper less serrate: racemes much shorter than the leaves, the upper ones sub capitate. 2—3 f. *S.*

latifolia, M. (3))broad-leaf golden-rod. E. y. Au. 2f.) stem somewhat zigzag, angular, smooth: leaves ovate-acuminate, strongly serrate, smooth contracted into winged petioles: racemes axillary. Leaves often 2 inches broad, and sometimes hairy on the under side of the midrib.

axillaris, Ph. (4) (axil golden-rod. O. Au. 2f.) stem glabrous, terete, straight: leaves lanceolate, serrate, glabrous: racemes axillary, sub-globose, erect: ligulate florets elongated.

virgaurea, (european golden-rod. E. y. 2f) stem flexuous, angular, pubescent: leaves serrate, roughish, attenuated at the base: racemes erect, panicled, close: rays elongated. Flowers large: rays 5—10: upper leaves nearly entire. 1—3 f. Var. *alpina*, leaves obovate or lanceolate, mostly entire: flowers few. 3—6 i. This species is the only one common to the two continents. Bw.

multiradiata, W. (E. y. S. 2f.) stem somewhat villose: leaves sessile, lanceolate, glabrous, ciliate; lower ones serrate at the apex: raceme terminal, erect: rays elongated, numerous. Labrador.

rigida, (hand-leaf golden-rod. E. y. Au. 2f.) stem corymbed, hairy, scabrous: leaves ovate-oblong, rough, with minute r gid hairs; lower ones serrate, upper ones entire: racemes compact: rays twice the length of the obtuse

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(1) mexicana, L. (2) integerrima, Miller. (3) flexicaulis, Mx. 1st variety. Var. latifolia, P. (4) flexicaulis, Mx. 3d variety.

calyx. Stem terete, striate, leafy: leaves a little hoary; radical ones petioled, 12 inches long, broad, acuminate, nerved; the rest 1 to 4 inches long: scales of the calyx round-obtuse, nerved, membranous at the edges. 3—5 f *S.*

roreboracensis, (star golden-rod. E. y. Oc. 2f.) radical leaves oval-oblong, long-petioled, rough: stem almost leafless, branched, furrowed, level-top corymbed: rays twice as long as the tapering calyx. Stem strong, rough, furrowed, having leaves only at the origin of the flowering branches: radical leaves with shallow serratures: flowers large, resembling in form some asters: calyx scales narrow, purplish. 2—3 f.

Southern.

1. *Racemes one-sided.*

villosa, Ph. (E. y. S. 2f.) stem erect, villous: leaves lanceolate, rather soft, serrate, nerveless: racemes panicled, one-sided. Stem robust: branches recurved, expanding. 2—3 f.

cinerascens, Sz. (E. y. S. 2f.) stem erect, slender, pubescent: leaves elongated, lance-linear, attenuate at the base, serrate, sub-scabrous on both sides; racemes recurved: peduncles and ray-florets elongated. Upper leaves small, distant. 3 f.

retrorsa, Mx. (E. y. S. 2f.) stem erect, terete, glabrous, (rough, S.) leaves closely sessile, linear, tapering above, glabrous, pellucid-punctate, reflexed, rough on the margin: branches of the panicle recurved. Stem pubescent above: leaves somewhat clasping, slightly mucronate. 3—4 f.

tortifolia, E. (1) (E. y. S. 2f.) stem erect, pubescent: leaves lance-linear, subserrate, spreading, twisted; midrib and upper surface scabrous, nearly glabrous beneath: panicle pyramidal: racemes recurved. Stem very pubescent above: leaves sometimes pubescent beneath, obscurely 3-nerved: panicle very compact. 3 f.

pyramidata, Ph. (E. y. S. 2f.) stem erect, terete, hispid: leaves oblong, acute, somewhat clasping, sessile, glabrous, scabrous on the margin, rarely and obsoletely toothed: panicle naked, secund, pyramidal: branches reflexed: peduncles glabrous. 4—6 f.

corymbosa, E. (E. y. S. 2f.) stem erect, glabrous: branches hispid: lower leaves lance-oblong; upper ones ovate; all fleshy, glabrous, rigid, scabrous and ciliate on the margin: racemes corymbed; lower ones recurved: ray florets elongated. Stem robust: leaves close-sessile; lower ones sub-dentate; upper ones generally entire. 4—6 f.

2. *Racemes erect.*

pubescens, E. (E. y. Oct. 2f.) stem erect, branching, pubescent: leaves long-lanceolate, tapering at the base, pubescent; lower ones serrate: racemes erect, panicled: ray florets middle size. Stem slightly scabrous, generally coloured: branches rigidly erect: upper leaves generally entire; lower ones almost spatulate. 3—4 f.

pauciflosculosa, Mx. (E. y. S. 2f.) glabrous, suffruticose: leaves lanceolate, obtuse, nerveless: panicle compound, many-flowered; fascicles erect: calyx oblong, 5-flowered: ray floret one.

pulverulenta, N. (E. y. 2f.) stem simple: stem and leaves pulverulent-pubescent: leaves sessile; lower ones oval, serrate; upper ones obovate, entire, scabrous on the margin: racemes erect, spike-form: ray florets (10,) elongated. The lower leaves somewhat resemble those of the spiraea salicifolia. E. 3—4 f.

erecta, Ph. (E. y. S. 2f.) stem simple: stem and peduncles pubescent: leaves lanceolate, acute at each end, glabrous, veiny, scabrous on the margin: racemes short, erect, axillary and terminal. There is great uncertainty about this species. E. 2 f.

(1) odora, Mx.

hirta W. (y. 2f.) stem panicled, rough: leaves lanceolate, scabrous on both sides; cauline ones serrate; branch ones very entire: racemes erect: rays elongated.

glomerata, Mx. (A. y. 2f.) stem low, simple: leaves glabrous, lance-oblong, serrate: racemes simple, composed of axillary glomerules; upper ones clustered: calyx turgid, many-flowered. Lower leaves broad-oval, acuminate, serrate. Nearly allied to Aster. N.

humilis, Ph. (y. 2f.) stem simple, erect, glabrous: leaves lanceolate, serrate, glabrous, attenuate at the base, elongated: racemes erect.

elata, Ph. (E. y. S. 2f.) stem terete, pilose, tomentose above: leaves lance-oval, acute, sub-entire, veiny, tomentose beneath: racemes erect, panicled: rays elongated. Leaves sessile, rather small, with elevated veins. 2—3 f.

salicina, E. (E. y. S. 2f.) stem tall, slender, pubescent above, a little scabrous: branches virgate, elongated, erect: leaves lanceolate, very scabrous above, glabrous beneath; lower ones serrate: racemes sub-secund: branches short, sometimes recurved. Stem when old nearly glabrous, generally coloured: leaves sessile, diminishing upwards; lower ones paler beneath. 4—5 f.

angustifolia, E. (E. y. S. 2f.) stem erect, glabrous: leaves subulate-linear, very entire, glabrous: racemes erect, panicled: ray florets middle size. Stem slender: branches numerous: leaves sessile, sometimes lance-linear, slightly scabrous on the margin. 2—3 f. Arnica.

17—1. SONCHUS. 49. 53.

arvensis, (y. Au. 2f.) calyx and peduncles hispid, sub-umbelled: leaves runcinate, denticulate, cordate at the base: root creeping.

oleraceus, (O. y. Ju. ☼.) peduncles sub-tomentose, umbelled: calyx glabrous: leaves lance-oblong, clasping, denticulate, sub-sinuate. Var. *aspera*, prickly. Perhaps introduced. 2—5 f. *S.*

macrophyllus, W. (b. Au. 2f.) peduncles hirsute, naked: flowers panicled: leaves large, lyrate, cordate at the base, hirsute beneath. 4—7 f.

spinulosus, Bw. (L. y. Au. ☼.) peduncles smooth, somewhat umbelled: leaves cordate at the base, oblong, clasping, waved, spinose. 2 f.

alpinus, W. (1) (mountain sow-thistle. b-w. Au. 2f.) peduncles hirsute, naked: flowers racemed, bracted: leaves runcinate, sagittate at the base, glabrous, glaucous beneath.

leucophæus, W. (2) (sow-thistle. E. b-w. Ju. ♂.) peduncles scaly: flowers racemed: leaves runcinate, acuminate: stem wand-panicled. 3—5 f. *S.*

floridanus, W. (E. b. Ju. ♂.) peduncles somewhat scaly: flowers panicled: leaves runcinate-lyrate, petioled, denticulate. Pursh says this is called *the gall of the earth*, and is used for curing the bite of the rattlesnake: but Mr. Elliott applies that name to the *Pananthes alba*; the root of which he says is very bitter. 3—6 f. *S.*

acuminatus, W. (E. b. Au. ♂.) peduncles somewhat scaly: flowers panicled: radical leaves sub-runcinate; cauline ones ovate, acuminate, petioled, denticulate in the middle. 3—4 f. *S.*

pallidus, W. (3) (E. y. Ju. 2f.) flowers in a compound terminal raceme or panicle: leaves lance-ensiform, clasping, toothed.

Southern.

ludovicianus, N. (W. y. J.) leaves all runcinate, retrorsely and sharply toothed: peduncles and calyx naked: panicle divaricate. Chaff conspicuously stiped. N. 3—5 f.

carolinianus, Wr. (E. y. Ap. ☼) stem erect, glabrous: leaves lanceolate, acute, undulate, sub-spinose-toothed, auricled at the base, half-clasping: flowers somewhat umbelled. 1—3 f. Hieracium.

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(1) montanus, Lk. cæruleus, S. canadensis, L. (2) spicatus, Lk. (3) Lactuca canadensis, L.

Sonchus, LACTUCA.

10—1. SOPHORA. 32. 93.

Southern.

sericea, N. (W. w. 2f.) leaves pinnate; leafets wedge-oval, smooth above, silky-villose beneath: spikes many-flowered, sub-sessile. 1 f.
Thermia.

Sophora, BAPTISIA.

11—5. SORBUS. 36. 92.

americana, W. (1) (mountain ash. A. w. M. ♄.) leaves pinnate; leafets acute, somewhat equally serrate, glabrous; general petiole glabrous. Berries purple. 10—20 f.
microcarpa, Ph. (A. J. ♄) leaves pinnate; leafets acuminate, unequally gash-serrate, glabrous; serratures setaceous-mucronate: common petiole glabrous. Berries scarlet. S. Sesuvium.

3—2. SORGHUM. 4. 10.

Exotic.

saccharatum, (broom corn. y-g. Au. ☼.) panicle somewhat whorled, spreading: seeds oval: glumes covered with permanent softish hairs: leaves linear. From the East Indies. 6—8 f.
vulgare, (indian millet, coffee corn. 2f.) panicle compact, oval, nodding when mature: seed naked, sub-compressed. Var. *bicolor*, glumes glabrous, black: seed globose. 5—7 f. Koeleria.

19—3. SPARGANIUM. 3. 8.

ramosum, Sw. (2) (bur-reed. O. w. Ju. ☼.) the 3-sided bases of the leaves concave on the two outsides: the general fruit-stem branched: stigma linear. In water generally. Flowers in round heads; the staminate heads above the pistillate ones, and considerably the smallest. 1—2 f. *S.**
americanum, N. (3) (lake bur-reed. E. w.) lower leaves about squalling the length of the stem; floral leaves concave at the base, erect: stigma simple, ovate-oblong, oblique, about half as long as the style. The stem is erect, nearly simple. Grows plentifully in a small lake in Troy, about a mile east of Rensselaer School. 1 f. *S.*
angustifolium, Mx. (4) (floating bur-reed. w. Au. 2f.) leaves flat, long-linear, very narrow, much longer than the stem, weak; the part above water floating on its surface. Grows in great abundance in the little Lake on Catskill mountain, 12 miles west of the village, near the Mountain House.
Carex.

17—1. SPARGANOPHORUS. 49. 55.

verticillatus, Mx. (water crown-cup. E. p. Au. 2f.) leaves linear, whorled: heads few, terminal: egret campanulate, 5-toothed. Floating in water. 1 f. *S.* Hymenopappus.

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(1) aucuparia, Mx. (2) erectum, L. (3) simplex, Ph.? (4) natans, Var. *a*. Ph.

* Mr. Elliott describes a plant under *americanum?* which does not agree with that plant in the vicinity of Troy. I have before me all the three species here described, and have often seen them growing. The plant of E. cannot possibly be either of them unless it is the *ramosum*. I do not believe that the *simplex* is an American plant.

Spartina, Limnetis.

16—10. Spartium. 32. 93.

Exotic.

junceum, (spanish broom. J. ♄.) branches opposite, wand-like, bearing flowers at the end: leaves lanceolate, glabrous.

scoparium, (scotch broom. J. ♄.) leaves ternate and solitary, oblong: flowers axillary: legumes pilose at the margin: branches angular. Ulex.

21—6. Spathularia. 58. 1.

flavida, (spatula fungus. Au.) pileus vertical, adnate at the base, tapering down into the stipe. Light-yellow; 1 to 3 inches high. Grows on the earth among the evergreens on Catskill mouuntain, south of the lakes. Leotia.

10—5. Spergula. 22. 82.

arvensis, (spurry. E. w. J. ☼.) leaves filiform, whorled: panicle dichotomous: peduncles become reflexed as the fruit advances to maturity: seed reniform. 8—12 i. *S.*

saginoides, (1) (pearl spurry. E. w. J. 2ℓ. or. ☼) glabrous: leaves opposite, subulate, naked: peduncles solitary, very long. Persoon asks whether this is not a variety of the Sagina procumbens. 2—3 i. *S.* Cerastium.

4—1. Spermacoce. 48. 57.

diodina, Mx. (button weed. E. w. Ju. ☼.) stem diffused, terete, hirsute: leaves lance-linear: stipule long, many-bristled: flowers axillary, sessile. 4—12 i. *S.*

Southern.

tenuior, (E. w. Ju. ☼) stem erect, glabrous: leaves lanceolate, scabrous above, nearly glabrous beneath: flowers whorled: seeds rough. Stem sometimes pubescent and flowers nearly solitary. Swartz.

glabra, Mx. (W. w. J. ☼.) stem procumbent, glabrous: leaves lance-ovate, glabrous on both sides: flowers whorled: seeds glabrous.

involucrata, Ph. (E. w.) stem very hispid: branches alternate: leaves lance-ovate, acuminate, hirsute on both sides: stipules many-bristled: heads terminal, involucred: stamens exsert. 1 f. Diodia.

21—6. Sphæria. 58. 1.

1. *Caulescent, or the receptacle elongated, clavate, corky, furnished with a trunk.*

bulbosa, (globule fungus. S.) sub-ramose, glabrous, dark-cinereous: root tuberous. On the earth in autumn in pine woods.

hypoxylon, gregarious, ramose, compressed, hirsute at the base. On decaying trunks of trees.

digitata, cespitose, black: stipes glabrous, connate at the base, clavate, terete: apex acuminate, sterile. In woods.

polymorpha, gregarious, forms various: clavules (little clubs) ventricose, surrounded every where with spherules. In beech woods, on trunks of trees.

2. *Receptacles without a stem, roundish and opening; tuberculate, with bordering spherules.*

concentrica, obovate and somewhat roundish, large; interrupted with concentric layers within. On trunks of the ash and willow.

(1) decumbens, E.

rubiformis, large, wholly black : spherules globose, a little prominent. On dry trunks.

fragiformis, gregarious, sub-confluent, rust-coloured, dark-shining within : spherules papillose. On beech trunks.

argillacea, scattered, sub-globose, clay-coloured or yellow-cinereous : spherules a little prominent, papillose ; substance softish, becoming sooty-yellow. On trunks of ash trees.

rubiginosa, opening widely, rugose, yellow, becoming rust-coloured : spherules somewhat concealed. On branches in shady places.

cohærens, gregarious, confluent, flattish ; at first dirty-yellow, smooth ; at length dark-coloured, and somewhat blistered. Adhering to the trunks of trees, particularly the beech.

melogramma, somewhat in rows, bursting, obconic, dark-sooty : spherules somewhat prominent. Bursting from under the cuticle of branches of trees, particularly the beech.

ribesia, bursting, soft, oval, sub-depressed : spherules dissected, growing white. Bursting from under the cuticle of the branches of the Ribes rubrum in the winter.

3. *Form various, opening, orbicular or round : spherules scattered, horizontal, immersed in fleshy coverings : little mouths scattered, mostly somewhat prominent, papillose or aculeate. Compound.*

densta, opening widely, thick, undulate-rugose, blistered ; at first fleshy, white-cinereous, pulverulent ; at length black, rigid. On trunks in woods, frequent.

lenta, aggregated, sub-orbicular, black : disk gibbose ; margin repand. On the trunks and roots of fallen beech trees ; found in autumn.

insitiva, compound, cortical, flat, linear-acuminate, white, single-headed ; a veil connate with the substance of the fungus : spherules papillose, black. In the fissures of the cuticle on decaying grape-vines.

macula, compound, of various forms, very flat, black, single-headed : spherules globose-acuminate, covered with a fugaceous veil. On dry oaken branches after long storms.

serpens, open, unequal, naked, becoming dark-coloured : spherules somewhat prominent. On oak and beech wood, sometimes on willow.

stigma, opening around, smooth, rimose ; little mouths immersed, flattish. In the fissures of thorn trees.

podoides, crowded together, hard, unequal : little mouths spinose, mostly bursting at the sides. On trunks of oak.

ceratosperma, roundish, convex, scattered : little mouths spinose, bursting from the middle. In the bark of the Rosa canina in July.

disciformis, scattered, orbicular, flattish, smooth : little mouths immersed, resembling punctures. In the dry cracks of beech, resembling pimples of a dark-shining colour, white-cinereous within.

4. *Opening : spherules horizontal, at first solitary at the margin, afterwards confluent, not joined with a fleshy substance, or manifest layers ; some are distant, but in some way connected by the crust.*

nebulosa, grey : spherules very minute, scattered, forming unequally-linear, interrupted, dark-grey spots : little mouths prominent, sub-acute. On the stems of large herbaceous plants.

velata, covering very broad : spherules scattered, immersed, covered with a sub-membranaceous crust : little mouths sub-prominent. Under the cuticle of the Tilia.

spiculosa, somewhat opening, dark-stained : little mouths long-terete, very slender. Immersed in dark-coloured branches.

5. *Spherules heaped together on the receptacles, which is crust-like, conic, in little cespitose bunches: little mouths converging towards the middle.*

ciliata, roundish: spherules nested in the prominent substance of the bark: little mouths very long, divaricate, sub-flaccid. On the branches of elms.

fimbriata, upon leaves, sub-circinal: little mouths spinose, clavate, surrounded at the base by a white fringe. Frequent on the leaves of the Carpinus.

nivea, conic, with a white farinaceous disk: little mouths prominent, papillose. On the dry branches of poplars.

leucostoma, disk truncate, white, perforated with blackening pores. On the stems and dry branches of plum trees and cherry trees of our orchards.

pustulata, sub-lenticular, with short contracted necks: disk sooty, perforated with one pore. On willow branches.

6. *Spherules arranged in a circle, decumbent, naked, nesting under the epidermis: little mouths approximate, mostly bursting.*

pulchella, compassed about, naked: little mouths very long, flexuose. Under the cuticle of the branches of the common garden cherry tree.

coronata, compassed about: little mouths thick, obtuse, smooth. On the branches of the thorn tree, rare.

faginea, compassed about: little mouths hooked and rugged. On the branches of the beech.

convergens, compassed about, concealed, naked: spherules ovate, erectish: little mouths straight, somewhat bursting. Nesting in the substance of the bark of some branches.

tessella, compassed about, bound with a black line: little mouths distant, or with 4 or 5 black punctures. On willow branches.

7. *Bursting, in a roundish-cespitose bunch: spherules free among themselves, papilla-like, setting on the receptacle.*

decolorans, cespitose, reddish-cinnabar colour, becoming pale: spherules globose, rugose-tubercled. On the branches of maple and elder.

coccinea, cespitose, pale-red: spherules ovate, smooth. In the dry bark of beech and elder.

8. *Spherules solitary, free, destitute of receptacles.*

(Little mouths very large, mostly compressed, nearly equalling the breadth of the spherule.)

episphæria, simple, gregarious, parasitic, red: spherules very minute, subcompressed, crested, flaccid. On the Sphæria stigma.

(Little mouths terete, spinose, equal to the length of the spherules, or exceeding them.)

rostrata, simple, naked: spherules granulated: little mouths very long, spinose. On decaying branches in July.

acuta, gregarious, naked: spherules black, shining, sub-globose: little mouths spinose, thickish, cylindric. On the stem of the common nettle in the spring.

(Little mouths shorter than the spherules, conic or cylindric, mostly papillose.)

porphyrogona, simple, aggregated, black, phial-form, imbedded in a thin violet-coloured crust. Persoon considers this species of Tode as a variety of *rubella*. On the Atropa belladonna.

craneosa, simple, opake, black: spherules papillose, smooth, covered with a thin white veil. On dry branches.

bysiseda, largish: spherules globe-papillose, surrounded with thick sooty-yellow down. On dry branches and bark.

spermoides, heaped together, opake, rigid: spherules globose, sub-terete downwards: little mouths papillose, obsolete. On dry trunks of trees.

bombarda, simple, fascicled, becoming sooty-yellow: spherules elongated, subventricose: little mouths are acute papillæ. Grow in heaps on decaying trunks of trees.

lingam, simple, scattered, sub-oval, depressed-concave, rugose with folds; little mouths irregular, decumbent, or almost wanting. Grow densely on the dry stems of red cabbage.

herbarum, simple: spherules scattered, smooth, mostly sub-depressed: little mouths papillose. On the dry stems of herbaceous plants.

pertusa, scattered: spherules immersed, ovate, hardish, sub-rugose; perforated at length with little caducous, obsolete mouths. In hard dry wood.

inquinans, simple, scattered, dark-stained: spherules somewhat prominent with wood, perforated. On the Acer, Lonicera, and Xylosteum.

(Spherules not furnished with visible mouths.

pulvis-pyrius, simple, heaped together: spherules ovate and roundish, tuberculed, rugose, furrowed in the middle. On trunks and dry wood.

moriformis, gregarious, simple: spherules tuberculate, obovate. On dry trunks, particularly of pines.

maculiformis, on leaves, simple: spherules sub-immersed, minute, roundish, conglomerate in unequal black spots. On the dry leaves of beech, hazle, maple, and elm.

Schweinitz's species.

I merely add his four sections as a specimen of his method; for his 2000 species of American fungi will soon be published.

Sec. Cordyceps. Clavate, or club-headed.

Sec. Poronia. Forms of crucibles or funnels.

Sec. Pulvinatae. Bed-like, cushion-like.

Sec. Connatae. Adhering or connate. Stilbospora.

21—3. SPHÆROCARPUS. 57. 3.

terrestris, Sz. small: frond very green and tender, reticulate, variously lobed: lobes ascending, ovate-acuminate: calyx globosely turbinate, central aperture round, closely aggregated on the frond, so that the frond is scarcely conspicuous. Carpobolus.

21—4. SPHÆROCOCCUS. 57. 2.

membranifolius, stem filiform, ramose, spreading into a flat dichotomous frond: divisions wedge-form: capsules pedicelled from the stem, ovate. Sea-shore.

confervoides, frond filiform, very branching: branches elongated, somewhat simple, sending off scattered setaceous branchlets, tapering to both ends: capsules hemispheric, attached to all parts of the frond. In the sea. Halymenia.

21—2. SPHAGNUM. 56. 4.

latifolium, (peat moss. O.) leaves ovate, sub-obtuse, concave, imbricate, converging at the apex: capsules spherical.

acutifolium, stem sub-ramose: branches filiform: leaves lance-ovate, revolute, erose at the truncate apex; imbricated 5-ways.

cuspidatum, stem flaccid: branchlets lax, bristle-form: leaves lanceolate, involute, truncate-erose, lax.

5—1. Spigelia. 47. 46.

marylandica, (pink-root. p. J. 2f.) stem 4-sided: leaves all opposite, sessile, lance-ovate, entire. A celebrated vermifuge. 9—18 i. *S.*
Verbascum.

21—5. Spiloma. 57. 2.

melaleuca, (efflorescent lichen.) crust thin, sub-membranaceous, unequal, sub-pulverulent, white: receptacles deformed, a little convex, scabrous, dark. On bark of trees.
roseam, Halsey. crust thin, rough, rose-colour: receptacles solitary, minute, roundish, and of a deeper colour than the crust. On hickory bark.
Anthonia.

20—5. Spinacia. 12. 28.

Exotic.
oleracea, (spinach. J. ☉.) fruit sessile, prickly or unarmed: leaves hastate-sagittate: stem branched. In habit resembles the Chenopodium album. 1—2 f.
Iresine.

11—5. Spiræa. 36. 92.

1. *Stem more or less woody.*

salicifolia, A. (1) (meadow-sweet, willow hard-hack. O. r. w. J. ♄.) leaves lance-ovate or obovate, serrate, glabrous: flowers in panicled spreading racemes. Var. *alba*, has white petals, and generally the twigs are reddish. The small branches are generally killed by frost in the winter, as also of the next species. 2—4 f. *S.*
tomentosa, (steeple bush, purple hard-hack, meadow-sweet. O. r. Ju. ♄.) leaves lanceolate, unequally serrate, downy beneath: racemes in a crowded, sub-panicled, spike. 2—3 f. *S.*
hypericifolia, (john's-wort hard-hack. w. M. ♄.) leaves obovate, entire or toothed at the apex: umbels sessile. Cultivated. 3 f.
corymbosa, Raf. (A. r-w. ♄.) leaves oblong-obovate, gash-toothed, pubescent beneath: corymb terminal, peduncled, compound, fastigiate, somewhat leafy. This may be the chamaedrifolia of Pursh, but probably not of L. Torrey.
crenata, (♄.) leaves obovate, acute, tooth-crenate at the apex: corymbs peduncled, crowded.
opulifolia, (nine-bark, snowball hard-hack. E. w. J. ♄.) leaves sub-ovate, lobed, doubly toothed or crenate, glabrous: corymbs terminal, crowded: capsules inflated: flowers trigynious. Wet. 3—5 f. *S.*
capitata, Ph. (W. J. ♄.) leaves ovate, somewhat lobed, doubly toothed, reticulate beneath, tomentose: corymbs terminal, crowded, sub-capitate, very long-peduncled: calyx tomentose.
sorbifolia, Ph. (W. w. Au. ♄.) leaves pinnate; leafets uniform, serrate: flowers panicled.

2. *Stem herbaceous.*

aruncus, W. (steeple-weed. A. w. J. 2f.) leaves 2—3-pinnate: flowers in a panicled spike: styles 3 to 5. Var. *americana*, has very long slender spikes. 4—6 f. *S.*
lobata, (r. Ju. 2f.) leaves pinnate, glabrous; the odd leafet large, 7-lobed: lateral ones 3-lobed: corymbs proliferous.

(1) alba, M.

Exotic.

ulmaria, (queen of the meadow. w. Au. 2f.) leaves pinnate, downy beneath; the terminal leafet larger, 3-lobed; the lateral ones undivided: flowers in a proliferous corymb. Stem herbaceous.

Southern.

discolor, Ph. (W. Ju. ♄.) leaves ovate, sub-lobed, toothed, obtuse, white-tomentose beneath, smooth above, short-petioled: panicle terminal, very branching; branches white-pubescent: calyx and germs villose.

betulifolia, Pall. (A. r. J. ♄.) leaves broad-ovate, gash-toothed, glabrous: corymbs terminal, compound, fastigiate, leafy. 1 f.

monogyna, T. & J. (W. ♄.) leaves broad-ovate, sub-3-lobed, gash-serrate, glabrous: corymbs umbelled: style one: pedicels glabrous: divisions of the calyx erect, spreading: germs villose. Gillenia.

Spiraea, GILLENIA.

21—2. SPLACHNUM. 56. 4.

umbellaceum, (umbrella moss.) leaves lance-ovate, acute: apophysis purplish-green, broad, inversely bladder-form.

setaceum, stems cohering: leaves lanceolate, gradually becoming setaceous-acuminate; apophysis clavate-turbinate. Marshes, &c.

Orthotrichum.

13—1. STACHYS. 42. 39.

hyssopifolia, Mx. (Ju.) slender, erect, somewhat glabrous: leaves sessile, linear and lance-linear, rarely toothed: whorls about 4-flowered. 12—15 i. *S.*

aspera, Mx. (hedge nettle, clown heal. O. w-p. Ju. 2f.) stem erect, hispid backwards: leaves sub-petioled, lanceolate, acutely serrate, very glabrous: whorls about 6-flowered: calyx with spreading spines. Var. *tenuifolia*, leaves very thin and slender.

sylvatica, W. (W. p. Au. 2f.) leaves ovate, sub-cordate, acuminate: whorls 6-flowered: stem prickly backwards. 1—2 f. *S.*

velutina, Sz. (W. b.) stem simple, 4-angled, villose, or sub-hispid: leaves lance-ovate, crenate-serrate, close-sessile, clasping, opposite and pointing 4 ways: nerves silky tomentose on both sides: whorls about 6-flowered: corol sub-pilose. 1 f.

Southern.

hispida, Ph. (E. y-p. Ju. 2f.) stem and leaves hispid: leaves petioled, ovate-oblong, acute, obtusely serrate: whorls about 4-flowered: calyx glabrous. 2 f.

tenuifolia, (E.) stem erect, angled, smoothish: leaves petioled, lance-oval, serrate, acuminate: whorls 6-flowered: calyx very pubescent.

intermedia, A. (2f.) whorls many-flowered: calyx sub-pungent: leaves oblong, sub-cordate, crenate: stem somewhat woolly. Leonurus.

Stachys, HYSSOPUS.

13—2. STANLEYA. 39. 63.

Southern.

pinnatifida, N. (W. y. 2f.) glaucous, smooth: leaves somewhat succulent, undulated, interruptedly pinnatifid: divisions sub-lanceolate, remotely toothed: racemes terminal, many-flowered: peduncles long. Mr. Nuttall thinks the Cleome pinnata of Ph. and this plant are the same. 3 f.

integrifolia, J. (W. y.) stem simple, angular: leaves entire, ovate, oblong, tapering to both ends: raceme terminal: silique of the length of the pedicel. Streptanthus.

5—3. Staphylea. 23. 95.

trifolia, (bladder nut. E. y-w. M. ♄.) leaves in threes : racemes pendant : petals ciliate below. When in flower, if the germ be cut transversely and examined, it will appear 2 or 3-celled, and will contain the rudiments of 15 to 20 seeds. But when the fruit is ripe, it consists of 2 or 3 inflated, adnate, sub-membranous capsules, each containing 1 to 3 hard small nuts. 6—12 f. *S.* Sarothra.

17—2. Starkea. 49. 55.

Southern.

spinulosus, Ph. (1) (W. y. Au. 2f.) caulescent : leaves bipinnatifid, gash-toothed : divisions linear, rigidly mucronate : flowers lateral and terminal, crowded : rays 2-toothed : chaff setaceous. 1—2 f. Eclipta.

6—5. Statice. 48. 33.

limonium, L. (2) (marsh rosemary, sea lavender. L. b. Au. 2f.) scape terete : panicle much branched : leaves lance-obovate, obtuse, mucronate, glabrous. The root is a valuable astringent. 12—18 i. *S.*

armeria, (thrift. L. r. 2f.) scape simple, terete, capitate : leaves linear, flat. 1 f. *S.* Linum.

10—3. Stellaria. 22. 82.

media, S. (3) (chickweed. O. w. M. 2f.) leaves ovate and heart-ovate, glabrous : stem mostly procumbent, having alternate lines of hairs on opposite sides. Number of stamens variable. 9—15 i.

pubera, Mx. (P. w. M. 2f.) pubescent : leaves sessile, ovate, ciliate : pedicels erect, (recurved, T.) petals longer than the calyx. Flowers large. 6—10 i. *S.*

borealis, Bw. (E. w. Ju.) leaves lance-oval : peduncles axillary, elongated, 1-flowered : petals and calyx about equal.

biflora, (E. w. J. 2f.) cespitose : leaves subulate : crowded : branches 2-parted : petals emarginate : calyx striate. Labrador. Is it an Arenaria ? Ph.

palustris, Retz. (4) (stichwort, meadow starwort. w. J.) leaves lance-linear, entire, glaucous : flowers panicled : petals 2-parted, larger than the 3-nerved calyx.

uliginosa, Sr. (5) (bog starwort. w. J.) stem diffuse, procumbent, much-branched : leaves lanceolate, ciliate and narrow at the base : peduncles somewhat in pairs, single or many-flowered : petals shorter than the calyx.

humifusa, Sw. (☼.) leaves ovate, sub-secund, sessile : stem procumbent, 4-cornered : peduncles solitary, short.

Southern.

prostrata, Bald. (6) (E. Ap. ☼.) leaves ovate, acute, smooth : petioles very long : stem prostrate, terete, hollow, dichotomous, sub-pubescent : peduncles solitary, long : flowers heptandrous ; calyx erect. Flowers small. I—4 f.

jamesiana, T. (W.) viscid-pubescent : leaves lanceolate, sub-falcate, closely sessile, acute : stem somewhat branched, flaccid : panicles lax, divaricate : petals 2-lobed, about twice the length of the oblong, acute divisions of the calyx. Arenaria.

Stellaria, Micropetalum.

21—6. Stemonitis. 58. 1.

fascicularis, (brittle bark buff-ball.) fascicled, steel-blue : head sub-turbinate :

(1) Amellus, Ph. (2) caroliniana, Ph. (3) Alsine media, L. (4) glauca, S. (5) alsine, Hn. (6) elongata, N. ?

stem very short: hairs or fibres attenuated: bark wholly evanescent. On trunks in beech woods in Autumn.

typhina, scattered, small: fibres cylindric, obtuse, sub-incurved; partly evanescent. On trunks.

leucostyla, gregarious, creeping: fruit ovate, violet-colour: stipe white. Springs up white and shining in autumn on branches and deciduous leaves. Tubulina.

21—5. STEREOCAULON. 57. 2.

ramulosum, becoming pale-white, ramose, scabrous, fibrous: branches scattered, elongated, sub-simple: receptacles terminal, at length sub-globose, dark-fuscous. On mountains.

paschale, frond cinereous-grey, branching, granulated, fibrous: branches crowded, very branching, short: receptacles scattered and terminal; at length convex, conglomerate, dark-fuscous. On rocks and sunny hills. Rhizomorpha.

17—1. STEVIA. 49 54.

Southern.

callosa, N. (W. r. S. ☼.) leaves linear, crowded, somewhat succulent, callous at the apex; upper ones alternate: flowers divaricate, sub-corymbed: egret about 8-leaved, erose, short. Brickellia.

Stewartia, STUARTIA.

21—5. STICTA. 57. 2.

crocata, frond reddish-fuscous, sub-lacunose, broad, woolly beneath: fruit-dots minute, citron-yellow; divisions torn-lobed, margined, pulverulent, yellow: receptacles scattered: disk dark-fuscous; margin frond-like, entire. On rocks and trunks of trees.

anthraspis, frond pale-cinereous-fuscous, lacunose-reticulate, very broad, sub-crenate in the round-lobed periphery; rugose, sub-villose beneath: fruit-dots minute, white: receptacles scattered: disk black, at length convex, and excluding the entire frond-like margin.

pulmonacea, frond light-yellowish olive, lacunose-reticulate, villose beneath, having pale naked papillæ; divisions sinuate-lobed, retuse-truncate: receptacles sub-marginal: disk flattish, rugose; margin frond-like, sub-rugose. On trunks of trees in woods.

sylvatica, frond ample, brick-fuscous, nakedish, sub-orbiculate, fuscous-villose beneath: pits excavated, pale-white; divisions gashed, lobed, deformed, repand-crenate: receptacles marginal: disk fuscous. On mountains among mosses, and on the roots of trees. Peltidea.

21—6. STILBOSPORA. 58. 1.

asterosperma, capsules stellate.

macrosperma, capsules elongated, cylindric. On beech limbs, or white birch bark. Naemospora.

19—15. STILLINGIA. 38. 96.

Southern.

sylvatica, (E. y. J. 2f.) herbaceous: leaves sessile, lance-oblong, tapering at the base, serrulate: staminate florets scarcely longer than the bracteal scale. 2—3 f.

sebifera, (1) (E. Ju. ♄.) leaves petioled, rhomboid, acuminate, entire, with a

(1) Croton, L.

gland below the base on the petiole; staminate florets pedicelled. Introduced. 20—40 f.

ligustrina, Mx. (E. J.) fruticose: leaves lanceolate, tapering to each end, very entire, petioled: staminate florets short-pedicelled. 6—12 f. Croton.

3—2. STIPA. 4. 10.

avenacea, (1) (feather grass. J. 2f.) leaves striate, glabrous: panicle spreading, sub-unilateral: branches whorled with branchlets: calyx acute, membranaceous, equalling the glabrous seed: awn naked, twisting. Var. *bicolor*, (2) seed obovate, bearded at the base.

juncea, Ph. (W. Au. 2f.) leaves convolute-filiform: panicle lax: calyx somewhat awned, longer than the seed: awn long, scarcely pubescent.

canadensis, Lk. (3) (E.) leaves setaceous: panicle small: calyx glabrous, obtuse-ovate, equalling the pubescent seed: awn thick, short.

Southern.

expansa, Lk. (E.) leaves striate, glabrous, somewhat glaucous: spikes alternate, panicled, spreading: flowers sessile, remote: calyx longer than the corol: awn short, naked.

stricta, Lk. (E.) panicle long, narrow: peduncles jointed, very straight: awns naked, somewhat flexuous. Has the aspect of an Andropogon. Lk.

parviflora, Ds. (W. 2f.) leaves radical, sub-rigid, filiform: panicle appressed and diffuse, many-flowered: awns becoming capillary towards the extremity. 1—2 f. Aristida.

Stipa, TRICHOCHLOA, ERIOCOMA.

3—1. STIPULICIDA. 22. 82.

Southern.

setacea, Mx. (4) (E. w. M. ☼.?) stem erect, smooth, 2—3-chotomous: lower leaves small, opposite, spatulate: branch-leaves none: stipules (2 at each fork,) fimbricate. 6—10 i. Polycnemum.

17—1. STOKESIA. 49. 54.

Southern.

cyanea, Hr. (E. b. 2f.) stem leafy: leaves lanceolate: peduncles axillary, 1-flowered. Stevia.

14—2. STREPTANTHUS. 39. 63.

Southern.

maculatus, N. (W. p. M. ☼.) glaucous: stem erect, terete: leaves clasping, heart-ovate, acute, entire: raceme terminal, corymbed. 1—2 f. Sisyrinchium.

6—1. STREPTOPUS. (5) 11. 14.

roseus, Mx. (rose bellwort. r-w. M. 2f.) glabrous, shining: leaves clasping, serrate-ciliate: anthers short, 2-horned. Woods. 12—18 i. *S.*

distortus, Mx. (6) (E. y. M. 2f.) glabrous: leaves clasping: pedicels solitary, twisted-geniculate in the middle. Woods. 2 f.

lanuginosus, Mx. (A. g-y. J. 2f.) whitish-woolly: leaves sessile, sub-cordate at the base, acuminate: pedicels in pairs on a short stipe. Flowers large. Berries red. Near Rochester. Stevenson. S. Convallaria.

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(1) virginica, P. (2) barbata, Mx. (3) juncea, Mx. (4) Polycarpon stipulifidum, Ph. (5) Uvularia, L. (6) Uvularia amplexifolia, W.

16—10. STROPHOSTYLES. 32. 93.

angulosa, (1) (E. p. Au. ☼.) leaves ternate; leafets angular, 2—3-lobed: peduncles longer than the leaves: flowers capitate. *S.*

helvola, W. (2) (r.) prostrate, sometimes twining: leaves ternate, deltoid-oblong: flowers capitate: banner short: wings large, expanded. *S.*

peduncularis, M., (3) (E. p. Ju. ☼.) stem prostrate or climbing: leaves ternate, oblong-ovate and deltoid: flowers capitate: banner rather large, emarginate: wings small: seed woolly. *S.* Apios.

21—1. STRUTHIOPTERIS. 55. 5.

pennsylvanica, W. (4) (E. 2f.) barren frond bipinnatifid: divisions entire, obtuse; lower one elongated, acute. Vittaria.

15—12. STUARTIA. 37. 74.

Southern.

virginica, Mx. (5) (E. w. M. ♄.) leaves ovate, acuminate: flowers axillary, generally in pairs: calyx ovate, obtuse: petals entire: styles united. 6—12 f.

pentagyna, (A. y-w. J. ♄.) leaves ovate, acuminate: flowers axillary, solitary: calyx lanceolate, calycled: petals undulate, gashed: styles distinct. 6—10 f. Hopea.

Stylandra, PODOSTIGMA.

Stylophorum, MECONOPSIS.

16—10. STYLOSANTHES. 39. 93.

elatior, (6) (pencil flower. y. Au. 2f.) stem pubescent on one side: leaves lanceolate, glabrous: bracts lanceolate, ciliate: heads 2 or 3-flowered. Var. *procumbens*, stem procumbent. 9—15 i. *S.* Coronilla.

15—12. STYRAX. 37. 74.

Southern.

grandifolium, (7) (E. w. Ap. ♄.) leaves broad-obovate, acuminate, tomentose beneath: racemes simple, axillary, leafy near the base. 4—12 f.

pulverulentum, Mx. (E. w. Ap. ♄.) leaves oval, acute, tomentose beneath: racemes lateral, few-flowered, leafy. 18 i.

laeve, Wr. (8) (E. w. Ap. ♄.) leaves lanceolate, acuminate at each end, serrate, glabrous: racemes lateral, leafy. Corol tomentose. 4—6 f.

glabrum, (9) (E. w. Ap. ♄.) leaves lance-oval, acute at each end, finely serrulate, membranaceous, glabrous: racemes lateral, leafy. 6—8 f. Halesia.

14—1. SUBULARIA. 39. 63.

aquatica, W. (owl wort. w. Ju. ☼.) stemless: leaves subulate. Wet. 1—2 i.

Southern.

alpina, W. (A. 2f.) stem branching: leaves obovate. Cochlearia.

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(1) Glycine, L. Phaseolus trilobus, Mx. vexillatus, Wr. (2) Phaseolus helvolus, W. Glycine umbellata, of the same. (3) Phaseolus helvolus, Mx. vexillatus, Ph. (4) Onoclea nodulosa, Sh. (5) malachodendron, L. (6) hispida, Mx. Trifolium, biflorum, L. (7) grandiflorum, Mx. (8) glabrum, Mx. (9) Botan. Mag. No. 921.

4—1. SWERTIA. 47. 46.

deflexa, S. (1) (g-y. Ju. ♂.) corol bell-form. with a deflected horn: leaves ovate: branches short. In swamps. 18—24 i.
pusilla, Ph. (false gentian. A. b. J. ☼.) corol wheel-form, twice as long as the calyx: stem simple, 1-flowered: leaves oblong. 1 i.

Southern.

fastigiata, Ph. (W. b. Ju. 2f.) corol bell-wheel-form, as long as the calyx: flowers fastigiate-clustered, axillary and terminal: pedicels in pairs: leaves spatulate-obovate, nerved: stem branching. Frasera.

3—1. SYENA. 5. 13.

Southern.

fluviatilis, (E. J. 2f.?) leaves crowded, subulate: flowers axillary, solitary, long-peduncled: peduncle recurved after flowering. 2—3 i. Stipulicida.

5—1. SYMPHITUM. 41. 42.

Exotic.

officinale, (comfrey. y-w. J. 2f.) leaves ovate-sub-lanceolate, decurrent, rugose. Naturalized. 2—4 f. Heliotropium.

5—1. SYMPHORIA. 48. 56.

racemosa, Mx. (2) (W. r. Au. ♄.) raceme terminal: corol bearded within. 2—3 f. *S.*
glomerata, Ph. (W. g-r. Au. ♄.) racemes axillary, capitate, conglomerate. 3—4 f. Triosteum.

Symplocarpus, ICTODES.

13—1. SYNANDRA. 42. 39.

Southern.

grandiflora, N. (W. y-w. J. 2f.?) stem irregularly sulcate: leaves sub-hirsute above, heart-ovate, acuminate, obtusely dentate; lower ones sub-petioled; upper ones sessile, clasping: flowers solitary, sessile. 1 f. Leucas.

21—2. SYNTRICHIA. (3) 56. 4.

ruralis, stem ramose: leaves obtuse, recurved, bearing hairs at the apex: capsule cylindric; lid conic. On walls, fields, &c. Didymodon.

2—1. SYRINGA. 48. 37.

Exotic.

vulgaris, (lilac. b-p. w. M. ♄.) leaves cordate: flowers in a thyrse.
persica, (persian lilac. b. M. ♄.) leaves lanceolate, entire and pinnatifid. Olea.

T.

17—2. TAGETES. 49. 55.

Exotic.

erecta, (african marygold. y. Ju. ☼) leaves pinnate; leafets lanceolate, ciliate-serrate: peduncles 1-flowered, incrassate, sub-inflated: calyx angled.

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(1) corniculata, Ph. not L. (2) Symphonicarpus, Mx. (3) Tortula or Barbula.

patula, (french marygold. y. Ju. ☼.) leaves pinnate; leafets lanceolate, ciliate-serrate: peduncles 1-flowered, sub-incrassate: calyx smooth: stem spreading. Inula.

11—1. TALINUM.

teretifolium,* Ph. (taliny. p. Ju. 2ſ.) leaves cylindric, fleshy, subulate: peduncles elongated, naked, cymose. 4—10 i. Darlington says, the seed is not arilled, according to the generic descriptions of W. & N. *S.* Meconopsis.

17—2. TANACETUM. 49. 55.

huronensis, N. (W. y. 2ſ.) leaves pseudo-bipinnate, gash-serrate, sub-tomentose beneath: pedicels thickened: ray-florets irregular, 4—5-cleft. Flowers large, corymbed.

Exotic.

vulgare, (tansey. y. Ju. 2ſ.) leaves doubly pinnate, gash-serrate. Naturalized. Var. *crispum*, (double tansey,) leaves crisped and dense. Artemisia.

21—16. TAXUS. 51. 100.

canadensis, W. (1) (dwarf yew, shin-wood. O. Ap. ♄.) leaves linear, 2-ranked, margin revolute: receptacles of the staminate flowers globose. Appears like a small spreading hemlock bush. 2—6 f.

baccata, W. (W. ♄.) leaves linear, 2-ranked, flat: receptacles of the staminate flowers globose. Polypodium.

Tephrosia, GALEGA.

17—2. TETRAGONOTHECA. 49. 55.

Southern.

helianthoides, W. (E. y. J. 2ſ.) scabrous: leaves opposite, sessile, lance-spatulate, toothed, pilose, glandular-punctate: calyx 4-angled. 2—3 f. Actinella.

21—2. TETRAPHIS. 56. 4.

pellucida, (four-tooth moss.) capsule cylindric: leaves which grow on the fruit-bearing stem ovate, acute, 1-nerved. Stem simple, 1 inch high; lid conic, reddish, thin, half as long as the capsule: teeth rigid, polished, brown: leaves oval, except those on the fructiferous stem. Grimmia.

13—1. TEUCRIUM. 42. 89.

canadense, (wood-sage, germander. O. r. Ju. 2ſ.) pubescent: leaves lance-ovate, serrate, petioled: stem erect: spikes whorled, crowded: bracts longer than the calyx. Var. *virginicum*, upper leaves sub-sessile: bracts about the length of the calyx. 1—3 f. *S.*

Southern.

laciniatum, T. & J. (W.) somewhat fruticose: leaves pinnately 5-parted; upper ones 3-parted; divisions linear: flowers axillary, solitary, pedicelled: pedicels much shorter than the leaves. Mentha.

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* This most elegant little annual is remarkably tenacious of life. I received the dry root in a letter from Mr. D. Townsend, collected in Dr. Darlington's locality in Penn. which I set in a box of earth in the spring of 1827, and it produced numerous flowers that season. Last summer a sufficient number of plants were produced by self-sown seeds, to supply numerous specimens for students.

(1) baccata minor, Mx.

1—1. THALIA. 8. 21.

Southern.

dealbata, Roscoe. (E. p. Au. 2f.) panicle white-pulverulent: spathe 2-flowered: leaves ovate, revolute at the summit. Callitriche.

12—13. THALICTRUM. 26. 61.

dioicum, (1) (meadow rue. O. w-r. M. 2f.) flowers dioecious: filaments filiform: leaves about 3-ternate; leafets roundish, cordate, obtusely lobed, glabrous: peduncles axillary, shorter than the leaves. 1—2 f. *S.*

revolutum, Dc. (2) (O. w. Au. 2f.) flowers dioecious or polygamous: filaments filiform: leafets generally 3-lobed; margin revolute, finely pubescent beneath. *S.*

carolinianum, Rose. (3) (E. w. J. 2f.) flowers dioecious: filaments filiform: leafets ovate, 3—5-toothed, glabrous, glaucous beneath: peduncles axillary, longer than the leaves. *S.*

rugosum, (w. J. 2f.) stem erect, terete, striate: panicle erect, much divided: flowers crowded: leafets ovate, sub-cordate, coarsely crenate, glaucous beneath, shining above. 2—5 f. *S.*

cornuti, (E. g-y. Ju. 2f.) leaves more than decompound; leafets ovate, 3-cleft: panicle terminal. 2—3 f.

corynellum, Dc. (E. w. Ju. 2f.) flowers polygamous: filaments clavate: fruit sessile, striate: leafets obtusely 3-lobed, pale underneath. 3—4 f.

purpurascens, (J. 2f.) stem twice as high as the leaves: leafets roundish, 3-cleft, gashed: panicle nearly naked: flowers nodding: stamens coloured: stems purple.

Southern.

ranunculinum, W. (E.) leaves simple, lobed, serrate; flowers corymbed. Anemone.

5—2. THAPSIA. 45. 60.

trifoliata, (4) (E. y. 2f.) petioles and joints of the stem pubescent: leaves ternate and biternate; leafets wedge-form and ovate, unequally gash-serrate, entire at the base: umbels terminal: partial involucre 3-leaved, subulate. 3 f. *S.*

Southern.

acaulis, Ph. (5) (W. w. J. 2f.) Described under Cnidium acaule. Ferula.

Thaspium, CNIDIUM, SISON, THAPSIA.

12—1. THEA. 54. 71.

Exotic.

bohea, (bohea tea. M. ♄.) flowers 6-petalled: leaves oblong-oval, rugose. From China and Japan.

viridis, (green tea. ♄.) flowers 9-petalled: leaves very long-oval. J. C. Lettson says this is only a variety of the bohea. Citrus.

21—6. THELEPHORA. 58. 1.

1. *Pileus entire, funnel-form.*

caryophylla, various: pileus funnel-form, thin, becoming fuscous-purple, strigose-hirsute: margin mostly gashed, or somewhat crisped. Among pines, &c. on the earth.

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(1) laevigatum, Mx. (2) pubescens, Ph. polygamum, M. (3) rugosum, Ph. (4) Ligusticum barbinode, Mx. Smyrnium barbinode, M. Thaspium barbinode, N. (5) glomerata, N. Selinum, Ph.

2. *Pileus halved, at length horizontal.*

rubiginosa, imbricate, rigid, reddish-chesnut-brown, glabrous both sides : papillæ large, scattered. On trunks of oaks, mossy beeches, &c.
spadicea, imbricate, sub-rigid, zoned, sub-tomentose, fuscous ; glabrous beneath, pale-fuscous.
ferruginea, effuse-reflexed, ferruginous : pileus thin, sub-tomentose, smoothish, pilose beneath. On fallen limbs of trees, &c.
hirsuta, cespitose, coriaceous, yellowish, strigose-hirsute ; glabrous beneath. On trunks, rails, &c.
lilacina, sub-imbricate, soft, not zoned, tomentose, pale ; at the margin and on the under-side pale-purple. On trunks of evergreens.

3. *Resupinate, effuse, papillose ; substance various.*

(Pale or flesh-coloured.)

quercina, resupinate, longitudinal, coriaceous, rugose, somewhat fleshy, almost destitute of a margin, and brown underneath. On oak branches, &c.
polygonia, fleshy : papillæ largish, many-sided. On dry branches of poplar.
lævis, white-fleshy, broadly effuse, very smooth ; margin byssus-like. On branches of poplar, &c.
rosea, somewhat wrinkled, rose-red : margin tomentose. On poplars, one or two inches long.

(Colour yellow or tan-colour.)

frustulata, very hard, smooth, rimose-parted, pale. Merisma.

10. THERMIA. 32. 93.

Southern.

rhombifolia, N. (1) (W. y. 2ℓ.) leafets rhomb-ovate, somewhat wedge-form, silky-pubescent beneath, obtusish : stipules leaf-like, round-ovate, oblique, shorter than the petiole : raceme interrupted. Virgilia.

Thermopsis, THERMIA.

5—1. THESIUM. 31. 24.

umbellatum, (2) (false toad-flax. O. w-g. J. 2ℓ.) erect : leaves oblong : umbels axillary, 3—5-flowered : peduncles longer than the leaves. 9—15 i. *S.* Queria.

14—1. THLASPI. 39. 63.

arvense, (penny-cress. W. J. ☼.) silicles sub-orbicular, compressed, smooth : leaves oblong, toothed, glabrous.
alliaceum, (W. ☼.) silicle sub-ovate, ventricose : leaves oblong, obtuse, toothed, glabrous. Introduced.
tuberosum, (r. M.) silicle sub-orbicular, short, compressed : leaves rhomb-ovate, obsoletely toothed, smooth, sessile ; radical ones long-petioled : stem pubescent, very short and simple : root tuberous and fibrous. 4—5 i.
campestre, (yellow-seed, false-flax, mithridate mustard. O. J. ☼.) silicle obcordate, inflated, glandular-punctate : cauline leaves sagittate, toothed. Very troublesome in flax-fields, and was probably introduced with flax-seed.
bursa-pastoris, (3) (shepherd's purse. O. w. M. ☼.) hirsute : silicles deltoid-obcordate : radical leaves pinnatifid. *S.* Draba.

(1) Cytissus, Ph. (2) Comandra, N. (3) Capsella, Dc.

19—16. THUJA. 51. 100.

occidentalis, (arbor vitæ, false white cedar. O. M. ♄.) branchlets 2-edged: leaves imbricated 4-ways, rhomb-ovate, close-pressed, naked, tubercled: strobiles obovate; inner scales truncate, gibbous below the apex. Vast quantities along the Erie canal from Rome to Montezuma. Cupressus.

13—1. THYMUS. 42. 39.

Exotic.

serpyllus, (mother of thyme. b-p. J. ♄.) flowers in heads: stem creeping: leaves flat, obtuse, ciliate at the base. Naturalized.

vulgaris, (thyme. b-p. J. ♃. ♄.) erect: leaves ovate and linear, revolute: flowers in a whorled spike.

lanuginosus, (lemon thyme. ♃. ♄.) flowers in heads: stem creeping, hirsute: leaves obtuse, villose. Melissa.

16—10. THYRSANTHUS. 32. 93.

Southern.

frutescens, (1) (E. p. M. ♃.) twining: leaves pinnate; leafets (9,) lance-ovate, sub-acuminate, pubescent: panicle clustered, axillary: legume coriaceous. Lupinaster.

10—2. TIARELLA. 13. 84.

cordifolia, (mitre-wort, gem-fruit. O. w. M. ♃.) leaves cordate, acute-lobed, toothed: teeth mucronate: scape racemed. Resembles the Mitella diphylla. 10 i.

menziesii, Ph. (W. ♃.) leaves ovate, cordate, acute, short-lobed, toothed; cauline ones alternate, distant: raceme filiform, somewhat spiked: calyx tubular. 1 f.

trifoliata, W. (W. ♃.) leaves ternate; leafets sub-rhomboid, serrate, pilose: racemes terminal; little corymbs of flowers alternate: calyx bell-form.

Southern.

biternata, Vent. (A. y-w. J. ♃.) leaves biternate; leafets heart-ovate, oblique, gash-lobed, toothed: stem leafy: panicle terminal, divaricate, with the flowers somewhat spiked. There is some obscurity about this plant; it cannot belong to this genus. Elliott. Resembles Spiraea aruncus. Ph.

bracteata, T. & J. (W. ♃.) leaves round-cordate, gash-serrate; serratures mucronate: scape racemed: flowers pentandrous, bracted: petals very narrow: stamens not exsert. This species differs from Tiarella in its pentandrous, bracted flowers, and from Heuchera in its distinct styles and habit. It should perhaps form a distinct genus. Torrey. Mitella.

11—1. TIGAREA. 39. 92.

Southern.

tridentata, Ph. (W. y. Ju. ♄.) leaves crowded towards the ends of the branches, obcuneate, 3-toothed, villose above, hoary-tomentose beneath: flowers terminal, solitary, short-peduncled.

12—1. TILIA. 37. 79.

glabra, V. (2) (bass-wood, lime-tree. O. y-w. Ju. ♄.) leaves round-cordate, abruptly acuminate, sharply serrate, sub-coriaceous, glabrous: petals trun-

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(1) Glycine, L. Apios, Ph. Wisteria speciosa, N. (2) americana, W. canadensis, Mx.

cate at the apex, crenate: style about equalling the petals: nut ovate. Large tree; wood soft and white. Leaves often truncate at the base. *S.*

laxiflora, Mx. (E. M. ♄.) leaves cordate, gradually acuminate, sparingly toothed, membranaceous, glabrous: panicles lax-flowered: petals emarginate, shorter than the style: nut globose. *S.*

pubescens, V. (1) (crop-ear bass-wood. E. y-w. Ju. ♄.) leaves truncate at the base, (one lobe cropped,) oblique, acuminate, tooth-serrate, pubescent beneath: panicle dense-flowered: petals emarginate, about equal to the style: nut globose, smooth. Var. *leptophylla*, leaves lax, serrate, very thin, somewhat papyraceous. *S.*

Southern.

heterophylla, Vent. (W. J. ♄.) leaves ovate, oblique at the base or equally truncate and cordate, sharply serrate, white-tomentose beneath: nut globose, somewhat ribbed. Cistus.

4—4. TILLÆA. 13. 83.

ascendens, Ea. (pigmy-weed. E. w.) stem ascending, rooting at the lower joints: leaves connate, subulate, fleshy: flowers axillary, solitary, sessile. Very minute. A new species. Discovered on the Housatonic by Prof. Ives, in the summer of 1816. Potamogeton.

6—1. TILLANDSIA. 10. 17.

Southern.

utriculata, (wild pine. E. w.) leaves somewhat glaucous and pruinose, concave, broad, subulate, setaceous at the apex, acuminate, recurved and very dilated at the base: panicle branching: flowers sessile: bracts somewhat 2-ranked, shorter than the calyx: petals twice as long as the calyx, erect, equal below, distinct at the apex, often gaping on the side: stamens longer than the corol. Leaves pale-green, retaining water in their dilated bases. 3 f.

juncea, Le Conte. (E. b.) stem leafy: leaves longer than the stem, gradually shorter towards the top, somewhat pruinose, channelled, subulate-setaceous, rigid, recurved at the apex, dilated at the base: spikes compound, many-flowered, distichous: bracts imbricate, longer than the calyx: petals equitant, thereby forming a tube, dilated in the middle, thrice as long as the bracts, margin and apex recurved: stamens longer than the corol: stigma round-capitate, hispid. Leaves pale-green: stem reddish: bracts red: stamens blue: anthers yellow. 1 f.

pinifolia, Le Conte. (E. b.) stem leafy: leaves equalling the stem, gradually shorter towards the top, at length scale-like, sub-pubescent, not pruinose, subulate-setaceous, semi-terete, erect, concave at the base: spikes simple, few-flowered: bracts short, imbricate: petals equitant, thereby forming a tube, longer than the bracts, dilated in the middle, recurved at the apex and margin: stamens longer than the corol. Leaves pale-green: stem and bracts red: stamens blue: anthers yellow. 5 i.

bartrami, E. (E. b.) stem leafy; leaves longer than the stem, gradually shorter towards the top, hoary-pubescent, subulate-setaceous, semi-terete, erect, concave and dilated, at the base: spike nearly simple, 6—8-flowered, 2-ranked: bracts imbricate: petals equitant, thereby forming a tube, dilated in the middle, longer than the bracts, recurved at the apex and margin. Leaves greenish: stem and bracts red: stamens blue: anthers yellow. 10 i.

caespitosa, Le Conte. (E. b.) stem scaly by the diminution of the leaves: leaves longer than the stem, hoary-pubescent, subulate-setaceous, semi-terete, erect, somewhat concave at the base: spikes 3—4-flowered: bracts imbricate: petals equitant, thereby forming a tube, dilated in the middle, longer than the bracts, recurved at the apex and margin. Leaves reddish grey: stem and bracts red: stamens blue: anthers yellow. 4 i.

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(1) americana, Wr.

recurvata, (E.) leaves shorter than the stem, terete, curved, subulate-setaceous, pruinose, whitish-pubescent, with narrow grooves, 2-ranked: stem naked above, 1—2-flowered: flowers sessile: corol longer than the calyx. 6 i.

usneoides, (E. g.) greyish, pruinose, whitish pubescent: stem diffuse, filiform, pendulous, branching, dichotomous, flexuous, or even spirally twisted: leaves subulate-filiform, semi-terete, twisted: flowers terminal, solitary, sessile: calyx glabrous, rusty, 3-parted: divisions, subulate, very acute, erect: petals 3, broad-linear, rounded at the apex, equitant below, thereby forming a tube equal to the calyx; lamina spreading, flat: stamens shorter than the tube. Diphylleia.

21—2. TIMMIA. 56. 4.

cucullata, leaves linear, narrow-acute, serrulate: peduncles shortish: capsule nodding, arched, obconic-turbinate, bursting from the side of the permanent calyptre: teeth of the outer peristome articulated. In damp and muddy places. Diplocomum.

18—1. TIPULARIA. 7. 21.

discolor, N. (1) (E. w. Au.) leaf solitary, plaited and longitudinally nerved: flowers racemed, nodding, bractless. Resembles the Corallorhiza. Malaxis.

6—3. TOFIELDIA. 10. 13.

pubens, Mx. (2) (E. g-w. Au. 2f.) scape scabrous: spike oblong, interrupted: capsules sub-globose, scarcely longer than the calyx. 12—18 i. *N.*

glutinosa, Mx. (E. 2f.) scape and pedicels glutinous-scabrous: spike with a few alternate fascicles: capsule egg-form, twice as long as the calyx.

pusilla, Mx. (scotch asphodel. g-w. J. 2f.) glabrous: leaves short: scape filiform: spike few-flowered, globular: little calyxes adnate to the rachis: capsule globose. Mountain swamps.

Southern.

glabra, N. (E. g-w.) scape terete, smooth: leaves linear, ensiform: spike short, dense, oblong: bracts acute, very small: peduncles solitary, angular, as long as the flowers: styles o: capsules distinct, membranaceous, equalling the corol. 8—10. i.

glaberrima, Macbride. (E. w. Oc. 2f.) very glabrous: flowers racemed: buds approximate, nearly whorled, 1-flowered. 2—3 f. Scheuchzeria.

11—1. TORREYA. Ea. (3) 17. 88.

[Omitted at p. 44. above Mentzelia and below the word *Southern.*] Calyx superior, 5-cleft, permanent: corol 10-petalled: capsule cylindrical, oblong, with a flat summit, 1-celled, 3 to 7-valved, parietal: receptacles in 3 to 7 fleshy masses, parietal: seeds numerous, compressed, arranged in a double horizontal series. 17. 88.

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(1) Limodorum unifolium, M. Orchis discolor, Ph. (2) pubescens, Ph. Narthecium, Mx. (3) Bartonia, Nuttall. See p. 24, where another plant is described under this name. I feel confident, that every American botanist, as well as the discoverer, will cordially unite with me in giving to this splendid genus, a name which seems to be almost identified with the science, on this side of the Atlantic. Dr. Torrey proposed Nuttallia for the generic name. But that name is already given to a well defined genus. As I received a specimen of the Nuttallia from Prof. Nuttall, I presume he does not intend to reject that plant; though no one would withhold his name from this more showy genus had not the modest discoverer been contented with the elegant Columnifera which takes his name.

Southern.

ornata, N. (W. y-w. A. 2f. ?) leaves lanceolate, interruptedly pinnatifid; segments sub-acute: base of the capsule foliose, 5 to 7-valved: seeds almost without margins. 2 to 4 feet high. Flowers very large, solitary and terminal, sessile, odorous. Found on the banks of the Missouri.

nuda, N. (W. y-w. 2f.) leaves sub-lanceolate, interruptedly pinnatifid, segments obtuse: capsule naked, 3-valved: seed margined: outer stamens petaloid, often sterile. Flowers smaller than the preceding species. Near the Great Bend on the Missouri. Mentzelia.

6—1. TRADESCANTIA. 6. 13.

virginica, (spider-wort. b. p. M. 2f.) erect, branching: leaves lanceolate, elongated, glabrous: flowers sessile: umbel compact, pubescent. Cultivated. 1—2 f. *S.*

rosea, Mx. (r. M. 2f.) erect, simple: leaves lance-linear: peduncles elongated: calyx smooth. 8—12 i. *S.* Caulophyllum.

19—3. TRAGIA. 38. 96.

Southern.

urens, (E. Ju. 2f.) erect: leaves lanceolate, sessile, obtuse, sub-dentate at the apex: stem and branches pubescent. Var. *subovalis*, leaves oblong-oval, sometimes wedge-form. Var. *lanceolata*, leaves lanceolate, sub-dentate and entire. Var. *linearis*, (1) leaves linear, nearly all entire. 12—18 i.

urticifolia, Mx. (E. Ju. ☼) leaves cordate, ovate, serrate: stem erect, very hirsute. 12—18 i.

macrocarpa, W. (W. Ju. ☼.) climbing, hispid: leaves deeply cordate, ovate, acutely toothed.

ramosa, T. & J. (W.) stem herbaceous, pilose, very branching: leaves petioled, lance-ovate, sharply serrate, hirsute beneath, sub-cordate at the base: racemes axillary, filiform, few-flowered. 8 i. Eriocaulon.

17—1. TRAGOPOGON. 49. 53.

Exotic.

porrifolium, (vegetable oyster, goat-beard, salsify. p. Ju. ♂.) calyx longer than the rays of the corol; the corollets very narrow, truncate: peduncles incrassate. Tolpis.

21—2. TREMATODON. 56. 4.

longicollis, stem short, simple: leaves subulate, setaceous: peduncles very long, twisted: capsule oblong, stiped, elongated: lid conic from the base, slenderly beaked. Dicranum.

21—6. TREMELLA. 58. 1.

mesenterica, roundish: sub-compact, undulate-plicate, orange-colour. On fallen limbs, &c.

fragiformis, roundish, sub-compact, round, red, plicate, thick-set, sub-lobate. On pine bark, &c.

spiculosa, flattened, effuse, thickish, black, having conic papillæ. 2 or 3 inches, on trunks.

foliacea, large, cespitose, glabrous both sides, thin, undulate-plicate, concave, crisped at the base, flesh-cinnamon colour. On decaying trunks in autumn.

undulata, ascending, membranaceous, lobed, sinuate-undulate, purple. On putrid wood.

(1) linearifolia, E.?

abietina, in groups, roundish, orange-colour, sub-plicate. On wood.
dubia, cespitose, viscous, fastigiate, soft, fleshy. On decaying trunks late in autumn. Peziza.

10—1. TRIBULUS. 14. 37.

Southern.

maximus, (E. y. Ju.) leaves pinnate; leafets about 4 pairs, outer ones largest: pericarps 10-seeded, not spiny. 1—2 f.
trijugatus, N. (E. y. ☉.) leafets 3 pairs; terminal ones largest, pubescent beneath: capsules 5, 1-seeded, muricate, spineless. Dionaea.

21—6. TRICHIA. 58. 1.

1. *Fruit turbinate or pear-form.*

botrytis, stiped, fascicled, opake, becoming dark-red: spikes elongated, connate, sub-racemed. On decaying trunks in autumn.
rubiformis, stiped, fascicled, steel-colour, shining: stipes connate, sub-pedate, short. On trunks in woods at the close of summer.
fallax, simple, stiped, at first red, then slate-colour: fruit plicate beneath, with a stipe. On trunks and soft decaying wood in autumn.
vulgaris, scattered: fruit from terete becoming sub-turbinate: hardly any stipe, becoming black. On beech trunks after a summer storm. A variety of *nigripes*. See Persoon's Fungi, p. 179; and Muhlenberg's Catalogue.

2. *Fruit round or reniform.*

nitens, crowded together, sessile, round, shining-yellow or cinnamon-colour. Among decaying beech and pine trunks in autumn.
varia, scattered, becoming yellow: fruit decumbent and reniform, sometimes round. On trunks.

3. *Fruit filiform and net-veined.*

reticulata, diffused, reticulate, ramose, yellow. On trunks and mossy bark in autumn. Arcyria.

3—2. TRICHOCHLOA. 4. 10.

capillaris, Lk. (1) (E. S. 2ℓ.) leaves convolute-filiform, smooth: panicle diffuse, capillary, very slender: pedicels longer than the awns: awns 3—4 times as long as the flower. 2 f. *S.* Arundo.

21—6. TRICHODERMA. 58. 1.

nigrescens, somewhat opening, flattish: seminal dust becoming black and sooty. On cut trunks, mostly maple, in winter and early spring. Conoplea.

3—2. TRICHODIUM. 4. 10.

laxiflorum, Mx. (E. M. 2ℓ.) culm erect: leaves setaceous and with the sheaths somewhat scabrous: panicle diffuse, capillary, with trichotomous branches: calyx unequal. 18 i. *S.*
scabrum, M. (2) (E. Ju. 2ℓ.) culm geniculate at the base, assurgent, branched: leaves lance-linear, flat, striate, scabrous: sheaths generally smooth: panicle whorled and divaricate: calyx unequal: corol ovate, acute, 3-nerved. 12—18 i. *S.*
datum, Ph. (E. Au. 2ℓ.) culm erect, firm: leaves narrow-linear, flat, scabrous: sheaths smooth: panicle whorled, a little spreading: glumes nearly equal. 3 f. *S.*

(1) Stipa, Lk. sericea, Mx. Agrostis Sericea, M. (2) Agrostis scabra, W.

montanum, T. (A. Ju. 2f.) culm cespitose, erect: leaves involute-filiform and with the sheaths scabrous: panicle capillary, lax a little spreading. 8—12 i.

perenneum, Wr. (1) (E. S. 2f.) culm decumbent: panicle somewhat diffuse; branches whorled and trichotomous: flowers racemed. 1—2 f. *S.* Agrostis.

Trichophorum, SCIRPUS.

17—2. TRICHOPHYLLUM. N. (2) 49. 55.

lanatum, Ph. (W. y. Ju. 2f.) Described under Actinella lanata.

Southern.

oppositifolium, N. (W. Ju. 2f?) decumbent, branching: short-hoary-pubescent: leaves opposite, palmate-3-cleft, segments ligulate, simple or divided: peduncle filiform, mostly dichotomous, scarcely longer than the leaves. 6—12 i. Matricaria.

13—1. TRICHOSTEMA. 42. 39.

dichotoma, (blue curls. b. Au. ☼.) leaves lance-ovate: branches flower-bearing, 2-forked: stamens very long, blue, curved. Var. *lincaris*, somewhat pubescent: leaves linear. 6—12 i. *S.* Phryma.

21—2. TRICHOSTOMUM. 56. 4.

pallidum, (hair-mouth moss.) stem simple, very short: leaves capillary, sheathing: capsule ovate with a slight apophysis, cylindric: lid conic: calyptre halved. Calymperes.

Tricuspis, WINDSORIA.

7—1. TRIENTALIS. 20. 34.

americana, Ph. (3) (chick wintergreen. O. w. Ju. 2f.) leaves lanceolate, serrulate, acuminate: petals acuminate. 3—6 i. Aesculus.

16—10. TRIFOLIUM. 32. 93.

reflexum, (r. J. 2f.) procumbent, pubescent: leaves obovate: stipules oblique, cordate: heads many-flowered: flowers pedicelled, at length all reflexed: legumes about 3-seeded. Near the great lakes. 12—18 i. *S.*

repens, (white clover. O. w. M. 2f.) creeping: leafets ovate-oblong, emarginate, serrulate: flowers in umbelled heads: teeth of the calyx sub-equal: legumes 4-seeded. *S.*

pratense, (red clover. O. r. M. 2f.) ascending, smoothish, leafets ovate, sub-entire: stipules awned: spikes dense-ovate: lower tooth of the calyx shorter than the tube of the corol, and longer than the other teeth. 2—3 f. *S.*

pennsylvanicum, (r. J. 2f.) ascending: stem very branching, zigzag; leafets oval-ovate, obtuse, entire: stipules awned: spikes ovate-cylindric, dense, solitary: lower tooth of the calyx shorter than the tube of the corol. *S.*

arvense, (rabbit-foot, field clover. O. w. Ju. ☼) erect, branching, villose: leaves linear-oblanceolate: spikes villose, oval-cylindric: teeth of the calyx setaceous, longer than the corol. Grows in dry pastures or barren fields. 6—10 i. *S.*

agrarium, (4) (y. J. ☼.) erect, sub-pubescent: leafets lance-wedge-form, obtuse, middle one sessile: stipules lanceolate, acute: spikes oval, imbricate: banner deflexed, permanent; teeth of the calyx subulate, glabrous, unequal. *S.*

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(1) decumbens, Mx. Cornucopia, Wr. (2) Actinella, Ph. (3) europaea, Mx. not L. (4) aureum, Pollich.

procumbens, W. (hop clover. E. y. J. ☼.) procumbent: stem hairy: leafets obovate, sub-marginate, glabrous: stipules short, lanceolate, acute: spikes oval, imbricate: banner deflexed, furrowed, permanent. 3—6 i. *S.*

campestre, Sr. (1) (y. ☼.) spike ovate, imbricate: banner deflected, permanent: leafets lance-ovate, middle one petioled: stem sub-diffuse: branches decumbent.

stoloniferum, M. (buffalo clover. w. J. 2.) sending off suckers from the base of the stem: leaves obovate, unequally serrate on the sides, and toothed at the end: teeth of the calyx narrow-lanceolate or subulate, longer than the tube: florets large, in a head-form spike.*

Southern.

carolinianum, Mx. (E. p-w. Ap. 2.) small, procumbent: leafets obcordate, (upper one only emarginate) hairy toothed: stipules 2-cleft: umbels capitate, peduncled, reflected, few-flowered: corol scarcely exserted: legumes 3—4-seeded. 3—10 i.

microcephalum, Ph. (W. w-p. Ju. 2.) ascending, pubescent: leafets obovate, emarginate, denticulate: stipules ovate, acuminate: heads very small, peduncled, few-flowered: flowers sessile: involucre ovate, awned: calyx awned, as long as the corol.

involucratum, W. (☼.) little heads roundish, peduncled; surrounded by a nor-bicular, toothed receptacle: stipules oblong, awned, toothed: stem erect, branched.

nanum, T. & J. (W. p. 2.) little heads few-flowered, umbelled: legumes 4—5-seeded: calyx glabrous; teeth nearly equal: leafets obovate-oblong, acuminate: stem cespitose, erect. 1—2 i. Psoralea.

Trifolium, MELILOTUS.

6—3. TRIGLOCHIN. 5. 13.

maritimum, (2) (arrow-grass. L. g. Ju. 2.) fruit ovate-oblong, of six united capsules. 9—15 i.

palustre, (W. g. Ju. 2.) flowers triandrous: fruit of three united capsules, nearly linear, attenuated at the base. 6—12 i.

Southern.

triandrum, Mx. (E. Ju.) triandrous: flowers 3-cleft, short-pedicelled: capsules roundish triangular: leaves sub-setaceous, almost as tall as the spike or scape. 6—9 i. Gyromia.

16—10. TRIGONELLA. 32. 93.

Exotic.

fœnum-græcum, (funegreek. ☼.) legumes sessile, solitary, straight, erectish, sub-falcate, acuminate: stem erect: leaves wedge-oblong.

Southern.

sericea, Ph. (3) (y. Ju. ☼.) leaves ternate, sessile, oblong, acute, silky-villose: peduncles axillary, 1-flowered, longer than the leaf: flower 1-bracted: divisions of the calyx linear: legume glabrous, very long. Thyrsanthus.

6—3. TRILLIUM. 11. 12.

sessile, (p. M. 2.) flowers sessile, erect: petals lanceolate, erect, twice as long as the calyx: leaves sessile, broad-ovate, acute. 8—10 i. *S.*

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(1) procumbens, S. agrarium, C. (2) elatum, N. (3) americana, N. Lotus, Ph.

* I drew this description from a dried specimen in Prof. Beck's collection, and published it in 1818. Pursh had drawn one from the same specimen. As I have not seen any improved description of this plant in the floras of those who have examined Muhlenberg's herbarium, I retain this for the present.

petiolatum, Ph. (W. p. J. 2f.) flower sessile, erect: petals lance-linear, erect, a little longer than the calyx: leaves very long-petioled, lance-oval, acute.

erythrocarpum, Mx. (1) (smiling wake-robbin. A. w. & r. M. 2f.) peduncles erectish: petals lance-ovate, acuminate, recurved, almost twice as long as the narrow-leaf calyx: leaves ovate, acuminate, rounded at the base, abruptly petioled. 3 i. *S.*

pusillum, Mx. (2) (dwarf wake-robbin. r. M. 2f.) peduncles erect; petals scarcely longer than the calyx: leaves oval-oblong, obtuse, sessile. *S.*

pendulum, W. (3) (nodding wake-robbin. w. M. 2f.) peduncles erect, with the flower a little nodding: petals ovate, shortly acuminate, spreading, flat, longer than the calyx: leaves rhomboid-acuminate, sessile.

purpureum, Kin. (A. p.) leaves spatulate-ovate, acuminate, net-veined: flowers peduncled, nodding: petals larger than the calyx. Nearly allied to, but distinct from, the preceding. E.

erectum, (4) (false wake-robbin. O. p. w-y. M. 2f.) peduncles erect or erectish, with the flowers a little nodding: petals ovate, acuminate, spreading, equalling the calyx: leaves rhomboid, acuminate, sessile. Var. *atropurpureum*, petals large, dark purple. Var. *album*, petals smaller, white: germ red. Var. *flavum*, petals yellow: both petals and calyx leaves longer and narrower. H. H. E. 12 to 18 inches high. Leaves often 3 to 4 inches broad. Peduncles about 3 inches long. 9—16 i. *S.*

obovatum, Ph. (E. r-w. 2f.) peduncles erect: petals obovate, obtusish, flat, spreading, scarcely longer or broader than the calyx: leaves rhomb-ovate, acuminate, close-sessile.

grandiflorum, (5) (w. M. 2f.) peduncles a little curved, and the flowers a little nodding: petals lance-spatulate, connivent at the base, much larger than the calyx: leaves broad-rhomb-ovate. Berries dark purple. Johnstown and Cambridge, N. Y. 1 f. *S.*

Southern.

cernuum, (6) (E. r-w. M. 2f.) peduncles recurved: petals lanceolate, acuminate, larger than the calyx: leaves obovate and oval, tapering to the base, acuminate.

stylosum, (7) (A. r-w.) slender: peduncle much shorter than the flower, recurved: petals undulate, spreading, oblong, obtuse, larger than the calyx: germ styliferous: style 1, as long as the stigma: leaves sub-petioled, lance-oval, acute at both ends. 8—10 i.

nervosum, E. (E. r-w. Ap.) peduncle recurved: petals lance-oblong, larger than the calyx: leaves lanceolate and ovate, acute at each end, membranaceous, nerved. 6—8 i.

ovatum, Ph. (W. p. Ap. 2f.) peduncle erect: petals oblong, acute, spreading, a little longer than the linear calyx: leaves ovate, gradually acute, closely sessile. Rumex.

5—1. TRIOSTEUM. 48. 53.

perfoliatum, (8) (fever root, horse-ginseng. O. p. J. 2f.) leaves oval, acuminate, connate: flowers sessile, whorled. Berries purple or yellow. 2—4 f. *S.*

Southern.

angustifolium, W. (9) (A. y. Ju. 2f.) leaves lance-oval, sub-connate: peduncles opposite, 1-flowered: stem hispid. 2—3 f. Mirabilis.

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(1) pictum, Ph. undulatum, W. (2) Pumilum, Ph. (3) cernuum, Ph. Bw. E. 4th Ed. not L. (4) rhomboideum, Mx. (5) rhomboideum, Var. grandiflorum, Mx. (6) catesbaei. E. (7) cernuum, Mx. (8) majus, Mx. (9) minus, Mx.

18—1. Triphora, N. (1) 7. 21.

pendula, M. (2) (three-bird orchis. w-p. Au. 2f.) root tuberous : stem leafy, about 3-flowered at the top : leaves clasping, ovate, alternate : lip entire. 4—6 i. *S.* Cymbidium.

19—3. Tripsacum. 4. 10.

dactyloides, (sesame grass. E. J. 2f.) spikes numerous, (3—4,) aggregate : florets staminate near the summit ; pistillate below. Var. *monostachyon*, spike solitary. 3—5 f. *S.*

Southern.

cylindricum, Mx. (E.) spike solitary, cylindrical, separating into short joints : flowers all perfect. Perhaps a Rottboellia. E. Comptonia.

3—1. Tripterella. 40. 45.

Southern.

capitata, Wr. (3) (E. w. J. ☼.) flowers in a terminal head : angles of the germ scarcely winged. 6—8 i.

coerulea, M. (4) (E. b. S. ☼. ?) flowers few in a terminal raceme : angles of the germ distinctly winged. 2—4 i. Boerhaavia.

3—2. Trisetum. 4. 10.

palustre, Mx. (5) (E. J. 2f.) panicle contracted, nodding, somewhat whorled : calyx 2—3-flowered : florets smooth, acuminate ; lower one awnless : lower valve of the upper floret bicuspidate, awned below the tip. 1—2 f. *S.*

purpurascens, T. (E. 2f.) panicle very simple, somewhat racemed, few-flowered : calyx few-flowered ; glumes very unequal, entire : culm and leaves smooth : stipules very short, truncate. 2 f. *S.*

subspicatum, (6) (2f.) panicle somewhat spiked : awn at length reflexed, exceeding the calyx. Bromus.

3—2. Triticum. 4. 10.

pauciflorum, Sz. (W.) spike simple, erect ; spikelets about 2-flowered : culm simple, leafy, terete, deeply striate, smooth : leaves somewhat glaucous, scabrous on the ribs and margin. 2 f.

Exotic.

hybernum, (winter wheat. J. ♂.) calyx-glume 4-flowered, tumid, even, imbricate, abrupt, with a short compressed point : stipule jagged : corols of the upper florets somewhat bearded. There are several varieties of this species which are induced by culture.

æstivum, (summer wheat. J. ☼.) calyx 4-flowered, tumid, smooth, imbricated, awned. Smith says this may be a variety of the last.

compositum, (egyptian wheat.) spike compound ; spikelets crowded, awned. Agropyron.

Triticum, Agropyron.

12—13. Trollius. 26. 61.

laxus, Sy. (7) (globe-flower. y. M. 2f.) petals 5, oblong, spreading : nectaries shorter than the stamens. Petals always, perhaps, 5, obovate : capsules short, abrupt, crowned with the elongated style. Coptis.

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(1) Arethusa, L. (2) trianthophorus, Sw. parviflora, Mx. nutans, Le Conte. (3) Anonymous, Wr. (4) Burmannia biflora, L. (5) Avena, Mx. Aira palleus, M. (6) airoides, Pb. Aira, L. (7) americanus, Donn.

8—1. TROPÆOLUM. 23. 73.

Exotic.

majus, (nasturtion, indian cress. y. & r. Ju. ☼. & 2ℓ.) leaves peltate, sub-repand: petals obtuse, some of them fringed. Elliottia.

17—1. TROXIMON. 49. 53.

Southern.

glaucum, Ph. (W. y. Ju. ♂.) scape 1-flowered, glabrous: leaves lance-linear, flat, very entire, glaucous on both sides: divisions of the calyx imbricate, acute, pubescent.

cuspidatum, Ph. (1) (W. y. M.) scape 1-flowered, sub-pubescent: leaves linear, undulate and tomentose on the margin: divisions of the calyx imbricate, cuspidate, glabrous. Apogon.

Troximon, KRIGIA.

21—6. TUBER. 58. 1.

ribarium, becoming black, roughened with warts. Globose, solid, destitute of root. On the earth. Often collected for food in Europe and Asia. Tulostoma.

21—6. TUBERCULARIA. 58. 1.

vulgaris, (tubercle fungus.) gregarious, bright red, ridgy or wrinkled, with a thick pale stipe-form receptacle. Mostly on dead branches of the common red currant.

rosea, (P.) scattered, loose, irregularly globose, rose-coloured. Bright pink little masses, which dissolve in rainy weather. This Smith gives as its best distinction from some lichens. Adhering to lichens on trees. Hysterium.

21—6. TUBULINA. 58. 1.

fragiformis, sub-orbicular; at first red, then rust-colour: tubular fruit thick, distinct at the apex. On trunks in the summer after a storm. Mucor.

6—1. TULIPA. 10. 14.

Exotic.

suaveolens, (sweet tulip. M. 2ℓ.) small: stem 1-flowered, pubescent: flower erect: petals obtuse, glabrous: leaves lance-ovate.

gesneriana, (common tulip. M. 2ℓ.) stem 1-flowered, glabrous: flower various-coloured, erect: petals obtuse, glabrous: leaves lance-ovate. Asphodelus.

21—6. TULOSTOMA. 58. 1.

brumalis, stipe smoothish: fruit globose, with a flat mouth. On walls, sometimes in meadows. Geastrum.

14—2. TURRITIS. 39. 63.

ovata, Ph. (w. M. ♂.) pubescent: radical leaves petioled, ovate, toothed, obtuse; cauline leaves clasping, oblong, serrate, acute. Resembles the hirsuta; perhaps a variety of it, which ought to follow it to the genus Arabis. *S.* Barbarea.

17—2. TUSSILAGO. 49. 55.

farfara, (colt's foot. y. Ap. 2ℓ.) scape single-flowered, scaly: leaves cordate.

(1) marginatum, *N.*

angular, toothed, downy beneath. The flower appears long before the leaves. 4—6 i.

frigida, W. (mountain colt's foot. y. M. 2f.) thyrse fastigiate : flowers with rays : leaves roundish-cordate, unequally toothed, tomentose beneath.

sagittata, Ph. (W. 2f.) thyrse ovate, fastigiate : flowers with rays : leaves radical, oblong, acute, sagittate, very entire ; lobes obtuse.

palmata, W. (E. Ap. 2f) thyrse fastigiate : flowers with obsolete rays : leaves roundish-cordate, half 7-lobed, gash-toothed, tomentose beneath.

Boltonia.

19—3. TYPHA. 3. 8.

latifolia, (cat-tail, reed-mace. O. Ju. 2f.) leaves linear, flat, slightly convex beneath : staminate and pistillate aments close together. Wet. 4—6 f. *S.*

angustifolia, (Ju. 2f.) leaves linear, channelled, semi-cylindric below and flattish above : staminate and pistillate aments a little separated. Not so large as the last species. Wet. 3—5 f. *S.* Sparganium.

U.

Udora, SERPICULA.

17—10. ULEX. 32. 93.

Exotic.

europeus, (furze. M. ♄.) leaves lance-linear, villose : bracts ovate, lax : branchlets erect. Arachis.

5—2. ULMUS. 53. 99.

americana, Mx. (elm, white-elm. O. g-p. Ap. ♄.) branches smooth : leaves oblique at the base, having acuminate serratures a little hooking : flowers pedicelled ; fruit fringed with dense down. Var. *pendula*, has hanging branches and smoothish leaves. Rafinesque says this is a distinct species. 40—70 f. *S.*

fulva, Mx. (1) (slippery-elm, red-elm. O. Ap. ♄.) branches scabrous, whitish : leaves ovate-oblong, acuminate, nearly equal at the base, unequally serrate, pubescent both sides, very scabrous : buds tomentose, with very dense yellowish wool : flowers sessile. The bark is very mucilaginous. 20—40 f. *S.*

nemoralis, (river-elm. Ap. ♄.) leaves oblong, smoothish, equally serrate, nearly equal at the base : flowers sessile. *S.*

Southern.

alata, Mx. (2) (whahoo. E. March. ♄.) branches on each side winged with a cork-like bark : leaves oblong-oval, acute, nearly equal at the base : fruit pubescent, ciliate. 30 f. Celtis.

21—2. ULOTA. 56. 4.

crispa, stem ramose : leaves lance-linear, recurved-undulate when dry : pedicels elongated. On trunks of trees. Bartramia.

21—4. ULVA. 57. 2.

1. *Spread.*

lactuca, fronds aggregate, oblong, flat, undulate-bullate, attenuate below, gradually dilated, laciniate-crisped. Pale-green, thin, weak and flaccid. Seas and bays.

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(1) aspera, M. rubra, Mx. younger. (2) pumila, Wr.

latissima, frond solitary, oblong, very broad, flat, margin undulated. Root contracted. Frond attached in a peltate-form, yellowish-green, coriaceous-membranaceous. Abundant along within the margin of the sea.

purpurea, fronds oblong, purple, undulate-crisped. Root contracted. Frond attached in a peltate-form, aggregated, sub-sessile, 1 to 3 inches broad, very thin, with dense, oblong-angled, or nearly trapezoidal, granulations. On rocks in seas and bays.

linza, frond lance-linear; margin undulate-crisped. About an inch broad, tapering to the base, green. Sea-shore.

crispa, frond bullate, plicate-crisped, rugose, aggregated into an expanded layer. Not adhering to paper on drying. On the earth in shades.

2. *Tubular.*

lubrica, frond sub-ramose, compressed, undulate-sinuate, gelatinous. Very narrow, about the twelfth of an inch, variously inflexed and curved, pellucid, green. Seed deposited in a quadrangular position. Adheres closely to paper on drying. In ditches.

intestinalis, frond tubulose, simple. Variable in size; very narrow. Obscurely green.

compressa, frond tubulose, simple or branched, filiform-compressed. Varying in size. Sometimes compressed and sometimes terete, obscurely green. In seas and bays. Vaucheria.

3—2. Uniola. 4. 10.

latifolia, Mx. (A. Ap. 2ℓ.) leaves broad, flat: panicle loose, nodding: spikelets long-peduncled: florets sub-falcate, monandrous; lowest ones abortive. 4 f. *S.*

gracilis, Mx. (E. Au. 2ℓ.) panicle elongated, racemose, appressed: spikelets 3-flowered: florets spreading, straight, monandrous; lowest ones abortive. 3—4 f. *S.*

spicata, (1) (L. Au. 2ℓ.) panicle spiked, straight: leaves involute, distichous, spreading: spikelets 5—9-flowered: florets triandrous. 18 i. *S.*

Southern.

paniculata, (2) (sea-side oats. L. Ju. 2ℓ.) panicle large, compressed: spikes sub-sessile: calyx 4—5-valved: flowers triandrous. 4—8 f.

nitida, Bald. (E. Ju.) leaves flat, narrow: panicle scattered, spreading: spikes few, sub-sessile: calyx 3-valved: flowers monandrous. 2—5 f.

stricta, T. & J. (W. 2ℓ.) very smooth: leaves narrow, erect: panicle erect, contracted: spikelets linear-oblong, many-flowered: flowers straight, awnless. Intermediate between Festuca and Uniola; perhaps a Ceratochloa.—Torrey. 1 f. Briza.

3—2. Uralepsis. 4. 10.

aristulata, N. (3) (E. Au. ☼.) lateral panicles concealed in the sheaths of the leaves; terminal ones partly exsert: calyx 3-flowered: bristle of the corol as long as the lateral cusps. Whole plant covered with a viscid acid secretion. T. 1 f.

Southern.

purpurea, Wr. (4) (E. S. ☼. ?) leaves subulate: panicle small, racemed: corol villose; outer valve more than twice the length of the calyx, when mature deeply 3-parted, 3-nerved and reflected; middle division with an awn as long as the valve. Whole plant has a strong saline taste. E. 2 f.

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(1) distichophylla, Rr. Festuca disticophylla, Mx. (2) maritima, Mx. (3) Aira purpurea, M. not Wr. (4) Aira, Wr.

cornuta, E. (E.) culm and leaves very narrow, pilose: panicle slender: middle awn of the corol longer than the valve, finely recurved. 2 f.
Windsoria.

5—2. URASPERMUM, N. 45. 60.

claytoni, (1) (sweet cicely. O. J. ♃.) leaves compound, hairy; leafets gash-toothed: umbels axiliary and terminal, about 5-rayed: style as long as the villose germ, filiform, deflected. 2 f. *S.*
hirsutum, Bw. (2) (E. J. ♃.) hirsute: leaves decompound; leafets gash-pinatifid: styles of the fruit pyramidal, approximate.
procumbens, (3) (E. M. ☼.) stem procumbent: leaves decompound; divisions lanceolate, rather obtuse: umbels about 3-rayed: fruit smooth, shining. 6—12 i. *S.*
canadense, (4) (O. w. J. ♃.) stem glabrous: leaves ternate, smooth; leafets rhomb-ovate, acute, gash-toothed: fruit oblong, very smooth. 1—2 f. *S.*
Eryngium.

21—5. URCEOLARIA. 57. 2.

panyrga, (pitcher-shield lichen.) effuse, granular-warty, pure white: warts clustered, bearing shields which are glaucous-mealy, with convex, entire, frond-like margins.
cinerea, var. *notata*, Ach. crust ashy, smooth and cracked: receptacle black, pruinose, immersed in the areolae.
calcarea, Ach. crust very white: receptacles smaller than the preceding.
Lecanora.

21—6. UREDO. 58. 1.

1. *Seminal dust rusty-yellow.*

rosæ-centifoliæ, (rose rust.) crowded, yellow, flat, opening; little heaps orbicular. On the leaves of the centfoil rose.
linearis, (yellow-grain-rust. J. ☼.) linear, very long, stained-yellow, at length but obscurely coloured. On the culms and leaves of barley, oats, rye, wheat. &c.

2. *Seminal dust white.*

candida, (white rust.) white, opening. On shepherd's purse, &c.

3. *Seminal dust black or sooty-yellow; on the fructification of plants.*

segetum, (smut. J.) dust black, very copious; growing in the spikes or glumes of grain. Is smut a plant?
caricis, dust black, naked, surrounding the capsules. On carexes.
Puccinia.

19—4. URTICA. 53. 99.

pumila, (5) (stingless nettle, rich-weed. O. Ju. ☼.) leaves opposite, ovate, acuminate, 3-nerved, serrate; lower petioles as long as the leaves: flowers monœcious, triandrous, in corymbed heads, shorter than the petioles. Stem smooth and shining; when in deep shades, the stem is pellucid. 8—12 i. *S.*

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(1) Myrrhis dulcis, 2d Ed. Scandix dulcis, M. Scandix, Mx. (see N.) Chaerophyllum, Ph. Myrrhis longistylis, T. (2) claytoni, T. not Mx. (3) Scandix, L. Chaerophyllum, Lk. Myrrhis, Sl. (4) Sison, L. Myrrhis, 4th Ed. Chaerophyllum, P. (5) Adesia trinerva, R.

urens, (dwarf stinger. J. ☼.) leaves opposite, oval, about 5-nerved, sharply serrate: spikes glomerate, in pairs. 9—14 i. *S.*

dioica. (common nettle. O. J. 4.) leaves opposite, cordate, lance-ovate, coarsely serrate: flowers dioecious: spikes panicled, glomerate, in pairs, longer than the petioles. 2—3 f. *S.*

procera, W. (O. Ju. 4.) leaves opposite, cordate, lance-ovate, serrate: petioles ciliate: flowers dioecious: spikes somewhat branched, glomerate, in pairs, equalling the petiole. Var. *gracilis*, slender: leaves lance-ovate: leaves and petioles hispid. Not so common as the last, which, if examined before full maturity may be mistaken for this. 3—4 f. *S.*

capitata, (J. 4.) leaves alternate, heart-ovate, acuminate, serrate, 3-nerved, twice as long as the petiole: glomerules spiked; the spikes are solitary, shorter than the leaves, leafy above: stem naked. 3—5 f. *S.*

canadensis, (1) (canada nettle. O. Ju. 4.) leaves alternate, heart-ovate, acuminate, serrate, hispid both sides: panicles axillary, mostly in pairs, spread-branched: the lower staminate ones longer than the petioles; upper pistillate one elongated: stem covered with stings, 5—6 feet high. Var. *divaricata*, has smoothish leaves, and sometimes very spreading; solitary panicles. 4—6 f. *S.*

Southern.

chamoedroides, Ph. (E. March. ☼.) leaves opposite, sub-sessile, ovate, serrate, strigose beneath: clusters of flowers axillary, sessile, sub-globose, reflexed. Prickles white, conspicuous, stimulant. 4—6 i. Parietaria.

21—5. USNEA. 57. 2.

florida, frond erectish, scabrous, pale-cinereous: fibres thick, horizontal: branches spreading, expanded, sub-simple: receptacles flat, very broad, becoming white, ciliate: ciliæ long, radiating. On trees. This and the following species of lichen are usually called tree-moss.

strigosa, frond effuse, ramose, dirty-cinereous, scabrous: branches longish, flexuose, dichotomous, lax, every where bearing strigose fibres: receptacles fleshy, broad, sub-lobate, tooth-radiate. Perhaps a variety of the florida.

plicata, frond pendulous, smooth, pale: branches lax, very branching, sub-fibrous: the extreme ones capillary: receptacles flat, broad, ciliate; the ciliæ very slender and long. Var. *hirta*, frond erect, somewhat rigid, sub-pulverulent, roughish: branches much divided, attenuated and sub-fibrillose. On trunks and branches of trees; most common on dry dead limbs of evergreens, from which it often hangs in long cinereous-green locks.

barbata, frond pendulous, smooth, terete, thickish, pale-green and sub-cinereous: branches diverging with scattered fibres, capillary at the apex, jointed beneath. On branches of old trees.

angulata, frond pendulous, flexuose, sub-simple, angled, pale-cinereous: angles acute, scabrous: fibres horizontal, approximate, simple, short, slenderly terete. On trees.

trichodea, frond prostrate, smooth, pale-white, filiform, tender, sub-ramose: fibres horizontal, somewhat 1-sided, scattered: receptacles uniform-coloured; the periphery elevated, thin, naked, entire. Lepraria.

2—1. UTRICULARIA. 24. 40.

ceratophylla, Mx. (2) (E. y. Ju. ♂.) leaves inflated, 6-whorled, with branching, capillary filaments on the sides: flowers sub-corymbed; upper lip of the corol somewhat 3-lobed; lower lip deeply 3-lobed; spur short, flattened-conoid, obtuse, deeply emarginate, appressed to the lower lip of the corol: fruit nodding: root very long, branching. 8 i. *S.*

macrorhiza, (3) (bladder-wort. E. y. J. 4.) leafless, floating: scape many-flow-

(1) whitlowi, M. (2) inflata, Wr. (3) vulgaris, Ph. not L.

ered, furnished with large scales: flowers racemed: upper lip of the corol sub-3-lobed; lower lip entire, with the sides deflected: palate large, with brown stripes: spur elongated, approaching the lower lip of the corol, obtuse, emarginate, conic at the base, linear at the tip: fruit nodding: root very long, very branching. 6—8 i. *S.*

striata, Le Conte. (1) (E. y. J. ☼.) leafless, floating: scape with 1—2 scales, 5—6-flowered: upper lip of the corol broad, expanded, 3-lobed; intermediate lobe striate; lower lip sub-3-lobed, sides reflected: palate with brown spots: spur nearly linear, elongated, obtuse, emarginate, appressed to the lip of the corol and nearly as long. *S.*

gibba, (E. y. Ju. 2[.) leafless, floating: scape naked: upper lip of the corol emarginate; lower lip sub-3-lobed; middle lobe sub-revolute, crenate: spur gibbous, incurved, obtuse, entire. 1—3 i. *S.*

fornicata, Le Conte. (2) (E. y. Au. ☼.) leafless, floating: scape naked, 1—2-flowered: upper lip of the corol 3-lobed; middle lobe arched over the palate; lateral ones appressed: lower lip entire: spur incurved, conoid, obtuse, entire, appressed to the lower lip of the corol. *S.*

purpurea, Wr. (3) (E. p. Au. 2[.) leafless, floating: scape 2—3-flowered: upper lip of the corol truncate, emarginate: lower lip 3-lobed; lateral lobes saccate: palate small: spur flattened-conoid, entire, appressed to the lower lip of the corol: root branching: branches 4—5-whorled. *S.*

personata, Le Conte. (E. y. ☼) leafless, rooting: scape with scales, many-flowered: flowers racemed: upper lip of the corol emarginate, reclined: lower lip small, entire, obtuse or abruptly acute: palate large, prominent: spur linear-subulate, acutish, somewhat pendulous: root small, naked. 4—8 i. *S.*

setacea, (4) (E. y. J. ☼) leafless, rooting: scape with scales, setaceous, distantly many-flowered: upper lip of the corol short, entire; the sides revolute at the tip: lower lip deeply 3-lobed: spur subulate, entire, as long as the lower lip: root small, naked. *S.*

cornuta, Mx. (leafless bladder-wort. y. Ju. 2[.) spur-nectary subulate, lengthened out longer than the corol, nearly vertical, acute: lower lip of the corol broad, 3-lobed: scape with two nearly sessile flowers at the top; no leaves at the base, but having dense alternate tufts of radical leaves.

Southern.

longirostris, (E. y. ☼.) leafless, floating: scape with scales, 1—2-flowered: upper lip of the corol sub-3-lobed; lateral lobes appressed: lower lip rather entire: spur linear-subulate, ascending, sub-incurved, emarginate, longer than the lower lip of the corol.

integra, (5) (E. y. ☼.) leafless, floating: scape with scales, 1—2-flowered: upper lip of the corol sub-3-lobed; lateral lobes sub-involute: lower lip entire: spur flattened-conoid, obtuse, entire, nearly equalling the lower lip.

fibrosa, Wr. (E. y.) scape 2-flowered: flowers large: spur obtuse: leaves root-shaped, fibrous. This and the next species are not satisfactorily defined. Le Conte.

biflora, Lk. (E. y. Ju.) nectary subulate, straight, nearly equalling the upper lip: scape about 2-flowered: leaves setaceous. Micranthemum.

6—1. Uvularia. 11. 14.

perfoliata, (bellwort. O y. M. 2[.) leaves perfoliate, oval, obtuse, (lance-linear or oval-oblong in the young state:) corol bell-liliaceous, scabrous or granular within: anthers cuspidate. 8—12 i. *S.*

flava, S. (y. M. 2[.) leaves perfoliate, oval-oblong, obtuse, undulate at the

(1) cornuta, Ph. not Mx. fibrosa, E. not Wr. biflora, Vahl? (2) gibba, E. not L. minor, Ph. not L. pumila, Wr? (3) saccata, 4th Ed. (4) subulata, Gron? (5) bipartita, E.

base: corol tapering to the base, scabrous within: anthers cuspidate. Is this distinct from the preceding? *S.*

grandiflora, S. (1) (E. y. J. 2f.) leaves perfoliate, oblong, acute: petals smooth within: anthers obtusish: nectaries roundish. Flowers large. 9—15 i. *S.*

sessilifolia, (O. y. M. 2f.) leaves sessile, lance-oval, becoming glaucous beneath: petals flat, smooth within: capsule stiped, (raised above the receptacle on a little stem:) stem glabrous. 8—12 i. *S.*

Southern.

tuberula, Mx. (A.) leaves oval, rounded at the base, somewhat clasping, both sides coloured alike: capsule sessile, ovate. Streptopus.

V.

10—1. Vaccinium. 18. 51.

1. *Leaves deciduous.*

stamineum, (squaw whortleberry. O. w. M. ♄.) leaves oval, acute, entire, glaucous beneath: pedicels solitary, axillary, filiform; corol spreading, bell-form; divisions oblong, acute: anthers exsert, awned on the back: berry pear-form. Var. *album*, has the nerves and veins of the leaves hairy, and the berry globose. Pursh makes this variety a distinct species; but Smith says it can hardly be called a variety. Berries of this species are large and light green when ripe. 2—3 f. *S.*

ramosum, C. (2) (bush whortleberry. O. w. J. ♄.) branchlets, leaves and racemes a little hispid, bedewed with resinous specks; the leaves oblong-obovate, acute at the base, mucronate, entire, both sides coloured alike: racemes bracted: pedicels short, axillary, sub-solitary, 2-bracted near the middle: corol bell-form; divisions roundish, including the anthers. Var. *hirtellum*, (3) racemes and calyx pilose: berries hispid. 12—18 i. *S.*

frondosum, (4) (blue whortleberry. O. w. M. ♄.) leaves oblong-ovate, obtusish, entire, glabrous, glaucous beneath, bedewed with many resinous dots: racemes lax, bracted: pedicels long, filiform, bracted: bracts linear. corol ovate-bell-form with acute divisions and enclosing the anthers. Var. *lanceolatum*, having lanceolate leaves, acute at both ends. Berries large and blue. 3 f. *S.*

resinosum, (5) (black whortleberry. O. p. M. ♄.) leaves slender, petioled, oblong-oval, mostly obtuse, entire, bedewed with resinous specks beneath: racemes lateral, 1-sided: pedicels short, somewhat bracted: corol ovate-conic, 5-cornered. Berries black. One variety has a yellowish-green, and another has a reddish-yellow corol. 1—4 f. *S.*

corymbosum, (6) (giant whortleberry. O. w. M. ♄.) flower-bearing branchlets almost leafless: leaves oblong-oval, acute at both ends, mucronate, sub-entire, sub-tomentose beneath, and hairy both sides when young, but glabrous above, and a little hairy at the veins beneath when mature: racemes short, sessile, with scaly bracts: corols cylindric-ovate: calyx erect style somewhat exsert. Var. *amœnum*, has the style not exsert, and the racemes are crowded: corol cylindric, and the calyx reflexed. The twigs are reddish, flowers large, with a reddish tinge. Var. *fuscatum*, has the leaves a little serrulate, glabrous: corymbed racemes terminal: pedicels long and nod-

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(1) lanceolata, W. perfoliata major, Mx. (2) frondosum, Mx. (3) hirtellum, A. (4) glaucum, Mx. (5) Andromeda baccata, Wm. (6) disomorphum, Mx. Album, Lk. Amœnum, W.

ding: corol cylindric, with short direct divisions: style hardly exsert. Flowers striped with red: calyx brown. Berries black. In wet ground this species grows very large. 4—12 f. *S.*

pennsylvanicum, Mx. (1) black-blue whortleberry. O. r. g. M. ♄.) branches angled, bark green: leaves sessile, lance-oval, mucronate, serrulate, both sides shining: fascicles of flowers crowded, sub-terminal: corol ovate, 5-toothed. Very branching, leaves flat, membranaceous, calyx green. 12—18 i. *S.*

virgatum, M. (E. J. ♄.) leaves oval, acute, smooth, serrulate or entire: flowering branches elongated, with sessile racemes: corol ovate. Dr. Bigelow thinks this is distinct from the virgatum of Pursh.

ligustrinum, Mx. (p. r. J. ♄.) branches angular: leaves sub-sessile, erect, lanceolate, mucronate, serrulate: fascicles gemmaceous, sessile: flowers nearly sessile: corol oblong-ovate.

tenellum, A. (dwarf whortleberry. A. r-w. M. ♄.) racemes bracted, sessile: corol cylindric-ovate: leaves oblong-oval, somewhat wedge-form, serrulate, nearly smooth.

uliginosum, (E. r-w. Ap. ♄.) leaves obovate, obtuse, very entire, glabrous above, pubescent and glaucous beneath: flowers sub-solitary, octandrous. corol short-ovate, 4-cleft. Var. *alpinum*, Bw. (2) (wintergreen whortleberry. A.) leaves obovate, entire: flowers sub-solitary: berries oblong, crowned with the stile. 1—2 f.

myrtiloides, Mx. (E. Ap. ♄.) leaves narrow, lanceolate, membranaceous, very entire, pubescent on the margin beneath, and near the nerves: flowers scattered, sub-solitary, very short-pedicelled. Labrador.

cespitosum, Mx. (E. ♄.) small, cespitose, very glabrous: leaves wedge-obovate, round-obtuse, distinctly serrate, membranaceous: flowers on the branches solitary, sub-sessile: corol short pedicelled. Labrador. 3 i.

2. *Leaves evergreen.*

vitis-idæa, (bilberry. w-r. M. ♄.) low: stem creeping, branchlets erect: leaves obovate, emarginate, revolute, sub-serrulate, shining above, punctate beneath: racemes terminal, nodding: corol bell-cylindric. Sometimes tetandrous.

ovatum, Ph. (W. M. ♄.) leaves petioled, ovate, acute, revolute, serrate, glabrous, coriaceous: racemes axillary and terminal, bracted, short: corol cylindric: calyx acute.

obtusum, Ph. (W. ♄.) creeping: leaves small, oval, roundish-obtuse at each end, mucronate, very entire, glabrous, coriaceous: peduncles axillary, solitary, 1-flowered.

Southern.

arboreum, Marshal. (farkleberry. E. w. M. ♄.) leaves petioled, obovate, acute at each end, mucronate, glandular-serrate, shining above, net-veined, sub-pubescent beneath: racemes bracted, nodding: pedicels axillary, solitary, filiform: corol cylindric-bell-form: divisions acute: anthers inclosed, awned on the back. 3—20 f.

pallidum, A. (M. ♄.) leaves ovate, acute, serrulate, glabrous: racemes bracted: corol cylindric-bell-form. A doubtful species. Ph.

galezans, Mx. (E. y-w. M. ♄.) leaves sessile, wedge-lanceolate, sub-serrulate, veined, pubescent: fascicles sessile: pedicels very short: calyx acuminate: corol ovate; throat very compressed: style exsert.

myrtifolium, Mx. (E. ♄.) creeping, very glabrous: leaves petioled, oval, lucid, revolute, sparingly denticulate: fascicles axillary, sub-sessile, few-flowered: corol sub-globose-bell-form, with 5 small short teeth: anthers awned on the back. Leaves perennial: berries black.

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(1) virgatum, W. Tenellum, Ph. not Aiton, Bw. (2) gaultheroides, Bw.

crassifolium, Ph. (E. r. J. ♄.) diffuse : branches ascending, lax : leaves lance-oblong, acute at each end, serrate, rigid, glabrous : racemes terminal, corymbed, bracted, few-flowered : flowers nodding : calyx appressed : corol bell form, spreading, deeply and acutely 5-toothed. Leaves perennial.

nitidum, Ph. (E. r. M. ♄.) erect, very branching : branches 2-ranked : leaves shining, oval-obovate, acute at each end, glabrous, serrate : racemes terminal, corymbed, bracted, nodding : corol cylindric. Leaves evergreen.

myrsinites, Mx (E. p. M. ♄.) erect, very branching, small-leaved : leaves sessile, oval, mucronate, sub-serrulate, smooth and lucid above, sub hirsute and scabrous-punctate beneath : fascicles gemmaceous, terminal and lateral : corol obtusely ovate. Var. *lanceolatum*, leaves lanceolate, acute at each end. Var. *obtusum*, leaves roundish-obovate. Leaves evergreen.

buxifolium Lin (1) (W. w. J. ♄.) low : leaves obovate, crenate-toothed, glabrous : fascicles crowded, sub-sessile, axillary and terminal : corol short-ovate : filaments glandular : stigma capitate. Leaves ever-green.

Andromeda.

Vaccinium, Oxycoccus.

3—1. Vaginaria. 3. 9.

Southern.

scirpoides, Mx. (2) (E. 2f.) culm leafless, sheathed : spike ovate, sub-solitary ; scales lance-spatulate. Nardus.

3—1. Valeriana. 48. 56.

dioica, W. (E. r. J. 2f.) glabrous : radical leaves sub-spatulate-ovate, entire, very long petioled ; cauline ones few, pinnatifid : divisions lanceolate, very entire and sub-dentate, obtusish. Hudson's Bay.

Exotic.

phu, (valerian. 2f.) cauline leaves pinnate, radical ones undivided : stem smooth.

Southern.

pauciflora, Mx. (W. w. J. 2f.) lower leaves pinnate ; upper ones ternate ; leafets oval, acute, serrate : panicle lax, few-flowered. 3 f. Crocus.

Valeriana, Fedia.

20—2. Vallisneria. 1. 22.

spiralis, var. *americana*, (tape grass. E. w. Au. 2f.) leaves floating, linear, obtuse, serrulate at the summit, tapering at the base : peduncle of the pistillate flower long ; of the staminate short and erect. In the river Hudson from Waterford to the Highlands. *S.* Salix.

21—5. Variolaria. 57. 2.

communis, crust cartilaginous, smooth, becoming white, at length unequal, cinereous, sprinkled over with white fruit-dots destitute of margins ; warts of the receptacles spheroid, pulverulent ; with a sub-membranaceous flattish pale nucleus, which is at length naked. On trunks of trees in the wood when stripped of bark, &c.

amara, crust rugose-rimose, unequal, sub-pulverulent, white, becoming subcinereous : warts of the receptacles close-pressed, plano-concave, bearing the fruit, uniform-coloured. On bark of trees.

velata, Ach. crust white : disk of the receptacle covered with a white lamina. On bark.

coralllina, Ach. crust with coralline papillae. Encrusting decayed mosses.

Urceolaria.

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(1) brachycerum, Mx. (2) richardi, P. Fuirena, Mx.

21—4. VAUCHERIA. 57. 2.

bursata, threads laxly ramose : vesicles solitary, globose ; peduncles perpendicular. In stagnant water. Very abundant in Rutland pond, Vermont.
dillwynii, threads flexuose : vesicles sessile, lateral, globose. Grows on naked earth in shades, either in spring or autumn. Hutchinsia.

6—3. VERATRUM. 10 13.

viride, (1) (itchweed, indian poke, white hellebore. O. g. J. 2f.) racemes panicled ; bracts of the branches lance-oblong, the bract of the flowers longer than the sub-pubescent peduncles : leaves broad-ovate, plaited, many-nerved. 3—5 f. *S.*
angustifolium, Ph. (A. g-y. J. 2f.) flowers monoecious and dioecious : panicle simple : petals linear : leaves very long-linear, keeled. Tall. *S.*

Southern.

parviflorum, Mx. (A. g. Ju.) leaves lance-oval, flat, glabrous : panicle slender, spreading : petals acute at each end, staminiferous. Helonias.

Veratrum, HELONIAS.

5—1. VERBASCUM. 28. 41.

thapsus, (mullein. O. y. J. ♂.) leaves decurrent, downy both sides : stem generally simple, though sometimes branched above : flowers in a cylindric-spike. When botanists are so infatuated with wild speculation, as to tell us the mullein was introduced, they give our youngest pupils occasion to sneer at their teachers. 3—6 f. *S.*
blattaria, (moth mullein, sleek mullein. w-y. J. ♄.) leaves glabrous, tooth-serrate ; lower ones oblong-obovate ; upper ones heart-ovate, clasping : pedicels 1-flowered, in a terminal panicle-raceme. Var. *alba*, leaves toothed : flowers white. Var. *lutea*, (2) leaves doubly serrate : flowers yellow. 2—3 f. *S.*
lychnitis, (y. J. ♂.) leaves oblong-wedge-form, white-downy beneath : spikes lax, lateral and terminal. *S.* Nicotiana.

13—1. VERBENA. 42. 39.

spuria, (E. b. Ju. 2f. ♂.) stem decumbent, with spreading branches : leaves in many-cleft divisions : spikes filiform : bracts exceeding the calyx. 1—2 f. *S.*
hastata, (vervain, simpler's joy. O. p-w. Ju. 2f. erect, tall : leaves lanceolate, acuminate, gash-serrate ; lower ones sometimes gash-hastate : spikes linear, panicled, sub-imbricate. Var. *pinnatifida*, has the leaves gash-pinnatifid, coarsely-toothed. Var. *oblongifolia*, leaves lance-oblong, deeply-serrate, acute : spikes filiform, panicled. 2—5 f. *S.*
urticifolia, (nettle-leaf vervain. O. w. Ju. 2f.) erect, sub-pubescent : leaves ovate, acute, serrate, petioled : spikes filiform, axillary and terminal : flowers remotish. 2—4 f. *S.*
angustifolia, Mx. (3) (pigmy vervain. E. b. J. 2f.) low, erect : leaves lance-linear, tapering to the base, thinly serrate, with channelled veins : spikes filiform, solitary, terminal or axillary. 1 f. *S.*

Southern.

aublatia, (4) (O. p. M. 2f.) assurgent : spikes solitary, imbricate, long-peduncled : divisions of the corol emarginate : leaves oval, deeply serrate and divided, petioled.
bracteosa, Mx. (5) (W. p. Ju. 2f.) small, decumbent, very hirsute : leaves

(1) album, Mx. (2) Claytoni, Mx. (3) rugosa, W. (4) longiflora, Lk. Buchnera canadensis, L. (5) Zapania, Lk.

laciniate : flowers spiked, sub-imbricate : spikes squarrose with very long-linear bracts, spreading every way.

paniculata, Lk. (Ap. Ju. 2f.) erect, somewhat scabrous : leaves lanceolate, coarsely serrate, undivided : spikes filiform, imbricate, corymb-panicled. 4—6 f.

diffusa, Lk. (p. 2f.) erect, very branching : leaves lance-ovate, serrate, sub-pubescent : spikes very long, lax, panicled, very diffuse.

caroliniana, (1) (E. p. J. 2f.) erect, scabrous : leaves oblong-obovate, obtuse, unequally serrate, tapering to the base, sub-sessile : spikes very long, filiform : flowers distinct. 2 f.

stricta, Vent. (b. Ju. 2f.) hirsute, hoary : stems stiffly erect : leaves sessile, obovate, serrate, sub-tomentose, very hirsute : spikes straight, imbricate, somewhat fascicled. Var. *mollis*, T. & J. (W. p.) stem erect, simple, terete, villose : leaves ovate, acutish, unequally gash-toothed ; teeth acute, hirsute above, soft-villose beneath : spikes dense-flowered, straight, terminal, somewhat in threes. Probably a distinct species. T.

bipinnatifida, N. (W. b. J. 2f.) somewhat erect, hirsute : leaves 3-cleft, bipinnatifid : divisions linear : seeds deeply punctate. Marrubium.

17—2. Verbesina. 49. 55.

sigesbeckia, Mx. (2) (crown beard. y. Ju. 2f.) stem winged : leaves opposite, lance-ovate, acuminate at both ends, sharply serrate : panicle brachiate : flowers in fascicles on the ends of the branches. 3—6 f. *S.*

virginica, (P. w. Ju. 2f.) stem narrow-winged : leaves alternate, broad-lanceolate, sub-serrate : corymb compound : calyx oblong, pubescent ; ray-florets 3 or 4. 3 to 6 f. *S.*

Southern.

sinuata, E. (3) (E. w. Oct. 2f.) leaves alternate, sessile, sinuate, attenuate at the base : flowers corymbed : calyx imbricate. 4—6 f. Anthemis.

17—1. Vernonia. 49. 55.

noveboracensis, (4) (flat-top. O. p. Au. 2f.) tall : leaves thick-set, lanceolate, serrate, rough : corymb fastigiate : scales of the calyx filiform at the apex. 4—6 f. *S.*

prœalta, (5) (r. Au. 2f.) stem tall, angled, thickly pubescent : leaves thick-set, lanceolate, acutely serrate, pubescent beneath : corymb fastigiate : scales of the calyx ovate, acute, awnless. Resembles the preceding, and probably only a variety. 4—7 f. *S.*

corymbosa, Sz. & Keating. (W. r.) stem sulcate, sub-scabrous ; leaves thick-set, sessile, sub-clasping, lanceolate, acuminate, sharp-serrate below, entire towards the apex, scabrous above, smooth and hollowed-punctate beneath : corymb terminal, fastigiate : scales of the calyx oval, obtuse, ciliate. 1 f.

Southern.

oligophylla, Mx. (Ep. Ju. 2f.) stem simple, branching above : radical leaves oval ; cauline ones lanceolate ; all toothed : corymb panicled : scales of the calyx lanceolate, acuminate. Varies with the flowers sub-sessile and pedunculed. 2 f.

scaberrima, N. (E. p. Ju. 2f.) leaves lance-linear, acute, close-sessile, very scabrous, nearly entire : corymb sub-umbelled, few-flowered : scales of the calyx lanceolate, naked, filiformly acuminate. Stem simple. 2 f.

angustifolia, (E. p. Ju. 2f.) stem simple : leaves numerous, long-linear, nearly entire : corymb sub-umbelled : scales of the calyx rigidly mucronate. 3 f.

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(1) Phryma caroliniensis, Wr. (5) Serratula, L. Chrysocoma tomentosa, Wr.? (2) Sigesbeckia occidentalis, L. (4) Chrysocoma gigantea, Wr.? (3) laciniata, N.

tomentosa, E. (1) (E. p. Au. 2f.) stem slender, tomentose above: leaves long, narrow, lanceolate, very acutely serrate, slightly scabrous above, hoary-tomentose beneath: corymb fastigiate: scales of the calyx filiform at the apex. 3—5 f.

fasciculata, Mx. (W. Au. 2f.) leaves long-linear, sparingly serrate: flowers corymbed, erect, approximate: calyx ovoid, smooth; scales unarmed.

altissima, N. (2) (O. p. Au. 2f.) stem glabrous: leaves lanceolate, serrate, somewhat scabrous: calyx small, hemispheric; scales ovate, acute, ciliate, unarmed, closely appressed. Var. *marginata*, T. & J. (W. p.) stem glabrous: leaves narrow-lanceolate, glabrous, very entire: corymb fastigiate: calyx hemispheric-turbinate: scales ovate acute, arachnoid-ciliate, a little mucronate, close-appressed. This may be a distinct species. T.

baldwini, T. & J. (W.) stem soft-pubescent: leaves lance-ovate, sharp-serrate, scabrous above, pubescent beneath: corymb diffuse, sub-fastigiate: calyx-scales lanceolate, squarrose, reflexed, scabrous-pubescent. Carthamus.

2—1. VERONICA. 40. 35.

officinalis, (speedwell. b. M. 2f.) spikes lateral, peduncled: leaves opposite, obovate, hairy: stem procumbent, rough-haired. 9—12 i. *S.*

serpyllifolia, (Paul's betony, smooth speedwell. O. b. M. 2f.) racemes terminal, sub-spiked: leaves ovate, glabrous, crenate: capsule about as long as the styles. 2—6 i. *S.*

alpina, L. (A.) corymb terminal: leaves opposite, lance-oblong, acute, toothed: calyx hispid.

anagalis, (brook pimpernel. O. b. J. 2f.) racemes opposite, long, loose: leaves lanceolate, serrate: stem erect. 12—18 i. *S.*

beccabunga, (brook-lime. b. J. 2f.) racemes opposite: leaves oval, obtuse, subserrate, glabrous: stem procumbent, rooting at the base. Probably a variety of the last. 9—18 i. *S.*

scutellata, (scull-cap speedwell. O. b. J. 2f.) racemes lateral, alternate: pedicels divaricate: leaves lance-linear, somewhat toothed. 9—12 i.

arvensis, (wall speedwell. O. w-b. M. ☼.) flowers solitary, nearly sessile: lower leaves heart-ovate, serrate, petioled; floral leaves lanceolate, sessile, longer than the peduncles: divisions of the calyx unequal. Var. *reniformis*, leaves sessile, reniform, entire. This variety is made a distinct species by Rafinesque. 3—8 i. *S.*

agrestis, (field speedwell. b. M. ☼.) flowers solitary: leaves heart-ovate, serrate, petioled: stem procumbent, pubescent: segments of the calyx ovate, equal, pilose. 5—10 i. *S.*

peregrina, (3) (purslane-speedwell. O. w. M. ☼.) flowers sessile, solitary: leaves glabrous, lance-linear, toothed and entire, obtuse, lower ones opposite: stem erect. 4—8 i. *S.*

hederifolia, (ivy speedwell. w-b. M. ☼.) flowers solitary: leaves equalling the petioles, round-cordate, 5-lobed; upper ones 3-lobed: segments of the calyx cordate, acute, ciliate: stem procumbent.

Southern.

reniformis, Ph. (W. b. J. 2f.) spikes peduncled; peduncles lateral, axillary, 1-bracted: leaves opposite, long-petioled, heart-reniform, gash-crenate: stem creeping. Leptandra.

Veronica, LEPTANDRA.

21—5. VERRUCARIA. 57. 2.

schraderi, (mite licben. P.) crust tartarous, hard, whitish, smooth: receptacles minute, crowded, nearly globular, navelled, sunk, semi-transparent,

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(1) Chrysocoma tomentosa, Wr.? (2) Chrysocoma gigantea, Wr.? (3) carolinlana, Wr. carnulosa, Lk.

within. Often on lime-stone, or other wrought stones in burying-grounds &c. scarcely visible.

stigmatella, (P.) very thin, membranaceous, smooth, rather polished, greyish : tubercles minute, convex, warty, crowded, sub-confluent : nucleus globose, becoming cinereous. On the smooth bark of trees and fruit.

punctiformis, Ach. receptacles small, hemispheric, seldom papillated : nucleus sub-globose. On old bark.

analepta, Ach. receptacle conoid, papillated : nucleus compressed. With the preceding, but larger.

epidermidis, Ach. receptacles very minute, flattened, roughish. Var. *cerasi*, Halsey, crust shining, of a silvery hue. On Betula and smooth bark of limbs.

gemmata, Ach. receptacles shining, papillated. On bark.

composita, Sz. crust yellowish-brown, very smooth, shining and bordered by a black line : receptacles small, immersed and clustered in long irregular dark spots.

pulla, crust thin, contiguous, membranaceous, smooth, dark-fuscous : receptacles minute, hemispheric, glabrous, sub-papillate, black within. On the bark of leather-wood, &c. Endocarpon.

Vesicaria, ALYSSUM.

16—10. VEXILLARIA. (1) 32. 93.

virginiana, W. (butterfly weed. b. Ju. 2f.) leaves ternate, ovate : calyx 5-parted, scarcely longer than the bracts ; its divisions subulate, diverging : legumes sub-ensiform. Climbing. *S.*

mariana, (w-b. Ju. 2f.) leaves ternate : calyx much larger than the lance-linear bracts, tubular, 5-cleft : legume torulose : seeds glutinous. Erect or climbing. 2 f. *S.*

Southern.

plumieri, P. (E.) leaves ternate, ovate-oblong, acuminate : calyx bell-form, shorter than the ovate bracts : corol large, silky. Climbing. Robinia.

5—3. VIBURNUM. 43. 58.

prunifolium, (black haw, sloe. E. w. J. ♄.) leaves round-obovate and oval, acutely serrate, glabrous : petioles margined. 8—15 i. *S.*

pyrifolium, Lk. (E. w. M. ♄.) glabrous : leaves ovate, acutish, sub-serrate ; petioles naked : fruit oblong-ovate : cymes sub-peduncled. Berries dark-coloured. 5—10 f.

lentago, (sheep-berry. O. w. J. ♄) glabrous : leaves broad-ovate, acuminate, hook-serrate : petioles margined, undulate : cymes sessile. The branches when full grown often form a fastigiate top. Berries black, oval, and pleasant-tasted ; somewhat mucilaginous. 8—15 f. *S.*

nudum, (E. w. M. ♄.) very glabrous : leaves oval, sub-entire, margin revolute : petioles smooth : cymes peduncled, and without bracts. Berries black. 8—10 f. *S.*

cassinoides. W. (J. ♄.) glabrous : leaves lance-ovate, acute at each end, crenate, sub-revolute at the margins : petioles keeled, without glands. *S.*

dentatum, (arrow-wood. E. w. M. ♄.) smoothish : leaves roundish and ovate, acute, tooth-serrate, furrow-plaited, glabrous both sides : cyme peduncled : fruit sub-globular. Berries blue. 4—12 f. *S.*

pubescens, Ph. (2) (w. J. ♄) pubescent : leaves round-oval, acuminate, tooth-serrate, furrow-plaited, villose beneath : cymes peduncled : fruit oblong. 6 f. *S.*

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(1) A substitute for a ridiculous name. See Persoon, p. 302, genus No. 1712.

(2) dentatum pubescens, A. dentatum tomentosum, Mx. tomentosum and villosum, R. rafinesquianum, Rs.

lantanoides, Mx. (hobble-bush, tangle-legs. O. w. M. ♄. leaves broad, round-cordate, abruptly acuminate, unequally serrate; petioles and nerves furnished with powdery rusty down: cymes sessile: fruit ovate. Stem very flexible and crooked. 4—8 f. *S.*

acerifolium, (maple guelder-rose, dockmackie. O. w. J. ♄.) leaves heart-ovate or 3-lobed, acuminate, sharp-serrate, pubescent beneath: cymes long-peduncled. Stem very flexible: leaves broad and sub-membranaceous. 4—6 f. *S.* Leaves applied to inflamed tumors by the Indians.

oxycoccus, Ph. (1) (high cranberry. E. r-w. J. ♄.) leaves 3-lobed, 3-nerved: lobes long-acuminate, with a few scattering teeth: petioles glandular, grooved above: cymes rayed. Fruit resembles the low cranberry, red and very acid. 5—8 f. *S.*

edule, Ph. (2) (w. Ju. ♄.) leaves 3-lobed, obtusish at the base, 3-nerved: lobes very short, tooth-serrate, with acuminate serratures: petioles glandular: cymes radiate. Small and upright. Resembles the oxycoccus.

Exotic.

opulus, (guelder rose, snow-ball. w. J. ♄.) leaves 3-lobed, sharp-toothed: petioles glandular, smooth: flowers in compact cymes, surrounded with radiating florets. Var. *roseum*, has the whole cyme made up of radiating florets.

linus, (laurestine. r-w. ♄.) leaves ovate, entire, with tufts of hair in the axils of the veins beneath: flowers in smooth cymes.

Southern.

obovatum, Wr. (3) (E. M. ♄.) glabrous: leaves obovate, crenate-dentate or very entire, obtuse cymes sessile: fruit roundish-ovate. Var. *punicifolium*, leaves obovate, entire, or slightly crenate at the apex, obtuse. 4—8 f.

laevigatum, (E. w. J. ♄.) leaves lanceolate, smooth, remotely serrate, very entire at the base: branchlets 2-edged.

nitidum, (E. ♄.) very glabrous: leaves lance-linear, shining on the upper surface, obsoletely serrate or entire: branches 4-angled.

molle, Mx. (J. ♃.) leaves roundish-cordate, furrow-plaited, toothed, pubescent beneath: petioles sub-glandular: cymes with rays: fruit oblong-ovate. Berries red. Sambucus.

16—10. VICIA. 32, 93.

sativa, (tare. O. b-p. Ju. ☉.) flowers in pairs, sub-sessile: stipules toothed, marked with dots: leafets oblong-ovate, retuse, mucronate: legumes erect, linear-terete, glabrous. Perhaps it may have been introduced. *S.*

americana, (p. M. ♃.) peduncles somewhat many-flowered, shorter than the leaves: stipules semi-sagittate, toothed: leafets 8 to 12, lance-oval, obtuse, glabrous.

cracca, (b. S. ♃.) spikes many-flowered, imbricate backwards, larger than the leaves: stipules semi-sagittate, linear-subulate, entire; leafets numerous, lance-oblong, pubescent. *S.*

caroliniana, Wr. (4) (w. M. ♃.) peduncles many-flowered; flowers distant: stipules lance-ovate, entire: leafets 8 to 10, lance-oval, smoothish. The banner of the flower is tipped with black. *S.*

tridentata, Sz. & Keating. (W. b.) stem sulcate, sub-pubescent: leafets numerous, narrow-oblong, entire, obtuse, short-mucronate, sparingly pilose above, densely pilose beneath: lower stipules wedge-form, broadly 3-cleft, with 3 prominent nerves, pubescent; upper ones lanceolate, long, acuminate, villose: calyx and peduncles pubescent.

Exotic.

faba, (garden bean, windsor bean. w. & black. J. ☉.) stem many-flowered,

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(1) Opuloides, M. Opulus pimina, Mx. americanum, A. (2) opulus edule, Mx. (3) cassinoides, Mx. (4) parviflora, Mx.

erect, strong: legumes ascending, tumid, coriaceous: leafets oval, acute, entire: stipules sagittate, toothed at the base. From Persia.

Southern.

sylvatica, (W. p.) peduncles many-flowered, longer than the leaves: leafets oval: stipules lunulate, setaceous toothed.

acutifolia, E. (E. w. Ap. ♃. ?) peduncles few-flowered, longer than the leaves: stipules lanceolate, entire: leafets (6,) linear, acute at each end: stem glabrous. Ervum.

Vicia, ERVUM. LATHYRUS.

5—1. VILLARSIA. 47. 46.

lacunosa, V. (1) (spur-stem, floating-heart. E. w. Ju. ♃.) leaves heart-reniform, (or shortish heart-form,) sub-peltate, lacunose beneath, floating: petioles bearing the flowers: corol glabrous. *S.*

Southern.

cordata, E. (E. Ju. ♃.) leaves cordate, very entire: petioles bearing the flowers. Hottonia.

5—1. VINCA. 30. 47.

[Generic description is here given, it having been omitted at page 27. It should follow Azalea above the word *Southern.*] Corol salver-form, twisted, border 5-cleft, with oblique divisions; throat 5-angled: seed naked, oblong: folicle-like capsules 2, erect, terete, narrow. 30. 47.

Exotic.

minor, (periwinkle. b. Ap. ♄.) stem procumbent: leaves lance-oval, smooth at the edges: flowers peduncled: teeth of the calyx lanceolate. Ipomeria.

5—1. VIOLA. 29. 30.

[According to Le Conte.]

1. *Stemless, or with a subterranean stem.*

(Leaves more or less reniform, always cordate, younger cucullate: proper colour of the corol violet.

cucullata, W. (2) (O. p. b. M. ♃.) glabrous: leaves cordate, somewhat acuminate, crenate-dentate; autumnal ones largest, very exactly reniform: peduncle somewhat 4-sided, longer than the leaves; divisions of the calyx subulate, acuminate, emarginate behind or very entire: petals (as in many American species) oblique, veiny, very entire, white at the base, upper one generally naked, glabrous, lateral ones bearded, and with the upper one, marked with a few blue lines. Var. *papilionacea*, Ph. (3) petioles and peduncles longer: leaves sub-lance-ovate: beards of the lateral petals often yellow. Var. *tetragona*, (L.) peduncle strong, exactly 4-sided: petals azure colour, veinless. Var. *villosa*, (4) leaves, petals and peduncles villose. 4—8 i. *S.*

affinis, Le Conte. (5) (O. b-p. M. ♃.) glabrous: leaves cordate-ovate, sub-acuminate, crenate-dentate: peduncle somewhat 4-sided, shorter than the leaves: divisions of the calyx emarginate or very entire behind, lance-ovate, sub-obtuse; two upper ones ovate: petals all very entire, veiny, and white at the base; upper one generally villose; lateral ones bearded, and, with the upper one, marked with a few blue lines. 1—6 i. *S.*

palmata, L. (O. p-b. M. ♃.) mostly villose: leaves heart-reniform, palmate-5—

(1) trachysperma, E. Menyanthes trachysperma, Mx. (2) obliqua, Sz. & T. (3) species of Ph. (4) azarifolia, Sz. (5) cucullata, Sz. & T. sororia, Ph.

7-lobed; lobes polymorphous, often narrow and gashed, middle one always larger; sometimes villose both sides, sometimes only beneath, often glabrous, all of them very often purple beneath: the first spring ones are ovate, entire; petioles sub-emarginate: peduncle somewhat 4-sided, longer than the leaves: divisions of the calyx lance-ovate, ciliate, very entire behind: petals all very entire, veiny, and white at the base, upper ones narrower, smaller, sometimes villose at the base, yet often naked, glabrous; lateral ones densely bearded, and with the upper one, marked with a few blue lines. One variety has white flowers. 3—6 i. *S.* Le Conte.

congener, Le Conte. (1) (E. p. Ap. 2f.) always villose: leaves broad-ovate, cordate, sub reniform, crenately and coarsely toothed, sometimes sub-lobate and lobed; decurrent into the subulate, very villose, large, strong petioles: peduncles somewhat 4-sided, shorter than the leaves: divisions of the calyx ciliate, ovate, obtuse, very entire behind: petals all very entire, veiny, white at the base; upper one narrower, generally naked, glabrous, yet sometimes the base is villose; lateral ones densely bearded, and with the upper one, marked with a few blue lines. A variety has the corol of very deep violet colour. Canada to Florida. *S.* Le Conte.

asarifolia, Ph. (Canada. p. M. 2f.) villose: leaves very large, sub-ovate-reniform, crenate, dentate, decurrent into the petioles, always entire: peduncle somewhat 4-sided, short, (rarely an inch and a half): divisions of the calyx ovate, ciliate, entire or emarginate behind: petals all very entire, veiny, white at the base; upper one glabrous, naked; lateral ones densely bearded, and with the upper one, marked with a few blue lines. *S.*

sororia, W. (2) (E. b-p. M. 2f.) leaves thickish, flat, appressed to the earth, orbicular and round-ovate, cordate, crenate, sinus at the base often closed, villose above, with the hairs erect, beneath glabrous, and generally becoming purple, petioles short, strong, with small stipules at the base: peduncle somewhat 4-sided, of the length of the leaves: divisions of the calyx short, subulate, obtuse, glabrous, very entire behind: petals obovate, short, all very entire, veiny, white at the base, upper and lateral ones bearded, and marked with a few blue lines. Dry woods. *S.* Le Conte.

(Leaves oblong or ovate, never reniform: younger ones cucullate.)

emarginata, Le Conte. (3) (E. b-p. M. 2f.) glabrous: leaves somewhat succulent, oblong-ovate, or even triangular-ovate, cordate, dentate, sometimes ciliate: upper ones unequally and coarsely gash-toothed at the base, and often decurrent into the petiole; midrib prominent; petioles sometimes villose: peduncle 4-sided, longer than the leaves: divisions of the calyx lanceolate, acute, emarginate behind: petals veiney, white at the base, all emarginate, villose; and the upper one densely villose; lateral ones bearded, and with the upper one, marked with a few blue lines. Dry woods. *S.* Le Conte.

sagittata, A. (E. b-p. Ap. 2f.) glabrous: leaves ciliate, oblong, not acute, sagittate-cordate, dentate, gashed at the base, (or furnished with elongated, divaricate teeth): peduncle somewhat 4-sided, longer than the leaves: divisions of the calyx lanceolate, acuminate, emarginate behind: petals all very entire, veiny, white at the base; upper one generally naked, glabrous; lateral ones densely bearded, and with the upper one, marked with a few blue lines: spur elongated behind. A variety has the leaves more or less villose. Dry. *S.* Le Conte.

ovata, N. (4) (O. p. Ap. 2f.) villose: leaves ciliate, oblong-ovate, sub-acute, cordate, often oblique at the base, decurrent into the petiole; upper ones gashed at the base; petioles shortish: divisions of the calyx ciliate, ovate or broad-lanceolate; more or less elongated behind and deeply emarginate or

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(1) assarifolia and triloba, Sz. (2) villosa, N. var. cordata, T. cordifolia, Sz. & Dc. (3) dentata, Ph. var. of the sagittata, Sz. N. & Dc. (4) ciliata, M. primulifolia, Ph.

cured: petals all very entire, veiny, white at the base; upper one naked, glabrous; lateral ones very densely bearded, and with the upper one, marked with a few blue lines: spur broad, generally elongated. Dry. 2—4 i. *S.* Le Conte.

(Leaves ovate or lanceolase: corol white, with the lateral petals narrower.)

amoena, Le Conte. (1) (E. w. Ap. 2f.) glabrous: leaves ovate sub-acuminate, crenate, sometimes sub-villose above; petioles long, spotted with red: peduncle somewhat 4-sided, equalling or exceeding the length of the leaves, spotted: divisions of the calyx lanceolate: petals all very entire, green at the base; lateral ones sometimes with the base pubescent, and with the upper one marked with a few blue lines. Moist woods. Flowers odorous. Le Conte. *S.*

blanda, W. (O. w. Ap. 2f.) glabrous: leaves round, sometimes sub-ovate, cordate, crenate, appressed to the earth, sometimes with a few scattering hairs above; petioles pubescent: peduncle somewhat 4-sided, longer than the leaves: divisions of the calyx lanceolate, obtuse: petals all very entire, green at the base: upper, and lateral ones rarely sub villose, marked with a few blue lines. Flowers odorous. Wet. 2—4 i. *S.* Le Conte.

primulifolia, L. (2) (E. w. J. 2f.) stoloniferous, glabrous: leaves oblong, or oblong-ovate, sub-cordate, acutish, crenate, decurrent into the petiole, nerve sometimes sub-villose beneath: peduncle somewhat 4-sided, longer than the leaves: divisions of the calyx lanceolate, obtuse: petals all very entire, green at the base; upper and lateral ones sometimes a little villose, marked with a few blue lines, in the upper one often obsolete. Var. *villosa*, (Georgia,) leaves very green; and with the petioles densely villose, becoming hoary. Flowers odorous. Wet. *S.* Le Conte.

lanceolata, L. (O. w. Ap. 2f.) glabrous: leaves (sometimes with a few scattering hairs) lanceolate, narrow, elongated, gradually attenuated into the petioles at the base, obtusish, crenate: peduncles somewhat 4-sided, reddish, of the length of the leaves: divisions of the calyx lanceolate, acute: petals all very entire, green at the base; lateral ones sometimes a little villose at the base, and with the upper one, marked with a few blue lines. Flowers odorous, small. Wet. 3—8 i. *S.*

(Stemless; but cannot be referred to any of the former sub-divisions.)

rotundifolia, Mx. (O. M. y. 2f.) glabrous: leaves thickish, appressed to the earth, broad-ovate or orbicular, cordate, crenate: nerves pubescent beneath: sinus closed: peduncle somewhat 4-sided, as long as the leaves: divisions of the calyx oblong, obtuse: petals sometimes emarginate; upper one small; lateral ones somewhat bearded, and, with the upper one, marked with a few yellowish-brown lines: spur very short. Woods. 1—3 i.

clandestina, Ph. (A. J. 2f.) glabrous, decumbent: leaves somewhat succulent, very green, shining, appressed to the earth, broad-ovate and ovate-oblong, obtuse, sometimes sub-orbicular, crenate: sinus often closed: peduncle somewhat 4-sided: branches 2—8-flowered: bracts in pairs, small at the base of each pedicel. Flowers of a chocolate-brown. Concealed under the dead leaves of trees.

pedata, L. (O. M. p-b. 2f.) glabrous: leaves sometimes ciliate, variously divided, very often pedately-3-parted; divisions linear and obtusely lanceolate, generally 3-lobed at the apex, often simply lanceolate, with the apex, 5—7-lobed: peduncle somewhat 4-sided: divisions of the calyx lanceolate, acute-ciliate, emarginate behind: petals all white at the base, veinless, very entire, very glabrous, naked; upper one truncate, and marked with a few

(1) obliqua, Ph. (2) variety of the lanceolata, Ph. acuta, Bw.

very blue lines, sometimes obsolete. Var. *velutina*, has the two lower petals of a very deep violet colour, and appears like velvet. Var. *alba*, has white flowers. Dry. 3—4 i. *S.*

2. *Caulescent.*

canadensis, A. (A. r. w. y. M. 2f.) glabrous: stem sub-simple, terete: stipules entire, membranaceous, oblong-sub-ovate or lance-ovate: leaves alternate, ovate, cordate, sub-acuminate, dentate: peduncle somewhat 4-sided: bracts small, subulate: flowers regular: divisions of the calyx subulate, acute, very entire behind: petals white, all very entire, veiny, becoming yellow at the base; lower ones pale-violet; upper one broad, expanding, glabrous, naked; lateral ones bearded, and, with the upper one, marked with a few blue lines: stigma short, pubescent, scarcely beaked: spur very short. Flowers odorous: stem often 2 feet long, flowering through the summer. Moist woods. 6 i.—2 f. *S.*

rostrata, M. (O. b-p. M. 2f.) glabrous: stems many, ascending, terete: leaves orbicular and ovate, cordate, crenate-dentate, sometimes with a few scattering hairs; younger ones cucullate: petioles much longer than the leaves: stipules linear, acuminate, furnished with elongated linear teeth: peduncle filiform, somewhat 4-sided, slender, axillary, very long: bracts minute, subulate: divisions of the calyx lanceolate, acute, entire behind: petals all very entire, veinless, naked, beardless; upper and lateral ones marked with a few blue lines: spur straight, elongated, linear, compressed, obtuse, double the length of the petals. Root woody, perpendicular and fibrous. Moist woods. 6—10 i. *S.*

muhlenbergiana, Gengin. (1) (O. b-p. M. 2f.) glabrous: stem terete, weak, sub-prostrate: leaves reniform, roundish, cordate; upper ones ovate, crenate, often purplish beneath; younger ones cucullate: petioles longer than the leaves: stipules large, lanceolate, serrate-ciliate, sub-pinnate: peduncles somewhat 4-sided, axillary, longer than the leaves: bracts minute, subulate: divisions of the calyx linear, acute, sub-ciliate: petals all very entire, veinless; upper one naked, glabrous; lateral ones bearded, and with the upper one, marked with a few blue lines: spur porrected, compressed, very obtuse: stigma ciliate behind; beak ascending. 3—6 i. *S.*

striata, A. (2) (W. y-w. J. 2f.) glabrous: stem oblique, branching, angular: leaves roundish and ovate, sub-acuminate, crenate-dentate, sometimes sub-pubescent: petioles long: stipules large, oblong-lanceolate, dentate-ciliate: peduncles 4-sided, longer than the leaves: bracts largish, linear: divisions of the calyx lanceolate, acuminate, ciliate, emarginate behind: petals all very entire; upper one marked, with a few blue lines, naked, glabrous, rarely a little villose; lateral ones bearded; lower ones sometimes a very little villose: spur sub-porrected: stigma pubescent behind. 6 i. rarely—2 f. Le Conte.

pubescens, A. (3) (O. y. 2f.) villose-pubescent: stem simple, erect, terete, leafless below: leaves broad-ovate, cordate, dentate; petioles short: stipules large, ovate, dentate: peduncles 4-sided, shorter than the leaves: bracts subulate, minute: divisions of the calyx lanceolate: petals all very entire, veinless; upper one naked, glabrous; lateral ones bearded, and with the upper one, marked with a few blue lines; lower ones often becoming reddish outside: spur short, gibbose, acutish: stigma pubescent, scarcely beaked. Varies in pubescence: leaves are even found glabrous; the capsules are also glabrous or woolly. 4—12 i. rarely—4 f. *S.*

hastata, Mx. (E. y. M. 2f.) glabrous: stem simple, erect, terete: leaves ovate, dilated, acuminate, cordate, dentate; upper ones lance-ovate, hastate and

(1) uliginosa, var. asarifolia, M. debilis, Sz. Ph. N. &c. canina, Wr. muhlenbergii, T. (2) ochroleuca, Sz. T. &c. repens, Sz. (3) pennsylvanicum, Mx. eriocarpa, Sz.

deltoid: petioles short: stipules ovate, dentate: peduncles somewhat 4-sided, shorter than the leaves: bracts very small, subulate: divisions of the calyx lance-linear, sub-dentate: petals all very entire, veinless; upper ones naked, glabrous; lateral ones bearded, and with the upper ones, marked with a few blue lines; lower one often becoming reddish outside: spur short, gibbose, acutish: stigma pubescent, scarcely beaked: capsule glabrous or pubescent on all sides. Var. *gibba*, (1) has no deltoid or hastate leaves. Var. *tripartita*, (2) villose: lower leaves cordate and 3-parted; upper ones deltoid, sometimes 3-parted and hastate. Woods. *S.*

tenella, M. (3) (E. b-w. M. ☼.) generally glabrous: root filiform: stem 3-sided, angled, erect, simple, leafy: leaves dentate; radical ones round or spatulate; upper ones ovate or lanceolate; all sub-spatulate: petioles short: stipules very large, pinnatifid, palmate; intermediate lobe oblong, longer and broader; the rest linear-oblong, all obtuse, ciliate: peduncles 4-sided, much longer than the leaves: divisions of the calyx lance-ovate, acuminate, ciliate, emarginate behind: petals expanded, white, stained with blue, yellow at the base; upper ones naked, glabrous; lateral ones bearded, and with the upper ones, marked with a few blue lines: stigma sub-pubescent, scarcely beaked. This species, and the V. *rostrata*, are the only American violets that have fibrous roots; all the rest have their roots scaly. *S.* Le Conte.

selkirkii, Ph. (A.) leaves cordate, crenate-serrate, a little pillose: petals beardless: spur long, thick, very obtuse. Montreal.

Exotic.

tricolor, (garden violet, heart's-ease, pansy. p. y. b-p. M. 2f.) stem angular, diffuse, divided: leaves oblong, deeply crenate: stipules lyrate-pinnatifid.

odorata, (sweet violet. b. M. 2f.) stemless: scions creeping: leaves cordate, crenate, smoothish: calyx obtuse: two lateral petals with a bearded or hairy line.

Southern.

heterophylla, M. (4) (E. p. March. 2f.) stemless, glabrous: leaves cordate, long-ovate, sub-acute, crenate-dentate, entire and sub-palmate-5-lobed; intermediate lobe much larger and broader: peduncle somewhat 4-sided, longer than the leaves: divisions of the calyx subulate, emarginate behind: petals all very entire, veiny, white at the base: upper ones often villose at the base; lateral ones densely bearded, and with the upper ones, marked with a few blue lines. A variety has white flowers. 8—12 i. Le Conte.

septemloba, Le Conte. (5) (E. p. March. 2f.) stemless, very glabrous, shining: leaves sub-succulent, ovate, cordate, dentate; lower ones entire, the rest pedate, 7-lobed; intermediate lobe larger: peduncle somewhat 4-sided, longer than the leaves: divisions of the calyx lanceolate, very entire behind: corol large: petals all very entire, veiny, white at the base; upper ones large, villose at the base; lateral ones densely bearded, and with the upper ones, marked with a few blue lines. Flowers often two inches in diameter. A variety has white flowers. Often 8 i. Le Conte.

alleghanensis, Rs. (A. 2f.) hirsute: leaves ovate and oblong-cordate, sub-entire: petioles membranaceous: lateral petals bearded: spur very saccate.

villosa, Wr. (E. p-b. March. 2f.) stemless, pubescent (not villose:) leaves flat, appressed to the earth, round-ovate and ovate, obtuse, cordate, dentate-crenate, livid-green; veins darker, sometimes purplish, often purplish beneath; sinus of the roundish ones nearly closed: petioles short: peduncle 4-sided, longer than the leaves: petals all very entire, generally villose; (lower one sometimes glabrous;) lateral ones bearded, and with the upper ones, marked with a few blue lines. After flowering the leaves become glabrous.

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(1) striata, Sz. gibba, R. (2) tripartita, E. (3) bicolor, Ph. N. arvensis, E. (4) palmata, var. heterophylla, E. (5) palmata, var. vulgaris, E.?

nuttalli, Ph. (W. y. M. 2f.) glabrous: stem simple, erect, terete, leafy: leaves lance-ovate obscurely dentate or very entire, attenuated at the base; stipules long, lance-linear, entire: peduncles somewhat 4-sided, shorter than the leaves: bracts minute: divisions of the calyx lance-linear, acuminate, very entire behind: petals all very entire, veinless; lateral ones bearded, and with the upper ones, marked with a few blue lines: spur short: stigma pubescent, scarcely beaked. 4—6 i.

debilis, Mx. (1) (A. March. Ap. w. 2f.) stem decumbent, much branched: leaves broad-ovate and cordate: stipules lacerate, ciliate: flower large, white. Not well defined.

radicans, Dc. (E. 2f.) rootlets horizontal, fibrous: stigma short-beaked, margined: leaves lance-ovate, abruptly attenuate at the base, or sub-cordate, serrate: stipules linear, setaceous-subulate, setose-serrate: divisions of the calyx linear, acute: scarcely spurred. Flowers minute; middle petals obovate. Ionidium.

Viola, Ionidium.

10—1. Virgilia. 32. 93.

Southern.

lutea, Mx. (A. y. J. ♄.) leaves pinnate; leafets alternate, ovate, short acuminate, glabrous: racemes elongated, pendulous: legumes petioled, flat. The bark affords a yellow dye. Pomaria.

20—4. Viscum. 43. 58.

verticillatum, (2) (misseltoe. g-w. J. ♄.) branches opposite and whorled: leaves wedge-obovate, 3-nerved: spikes axillary, a little shorter than the leaves. Berries yellowish-white. On the branches of old trees. This, Smith says, is the golden bough of Virgil, and the sacred plant of the Druids. 1—2 f. *S.*

Southern.

rubrum, W. (E. ♄.) leaves lance-obovate, obtuse: spikes axillary, whorled.

purpureum, W. (E. ♄.) leaves obovate, obtuse, obsoletely 3-nerved: spikes axillary: flowers opposite. Macluria.

5—1. Vitis. 46. 72.

Remark. All the North American species of grape are polygamous or diœcious.

labrusca, (3) (plum grape. w-g. J. ♄.) leaves broad-cordate, lobe angled, white downy beneath; fertile racemes small: berries (blue. flesh-colour and green) large. Var. *labruscoides*, (fox grape,) has smaller fruit, approaching a tart taste. *S.*

vulpina, (4) (frost grape. O. w-g. J. ♄.) leaves cordate, acuminate, gash-toothed, glabrous both sides: racemes lax, many-flowered: berries small. Leaves very variable; but the uppermost mature leaves will agree with the description. *S.*

æstivalis, Mx. (5) (summer grape. E. w-g. J. ♄.) leaves broad-cordate, 3 to 5-lobed; in the young state rust downy beneath; fertile racemes oblong: berry small. Var. *sinuata*, leaves sinuate-palmate, coarsely toothed. *S.*

riparia, Mx. (6) (odoriferous grape. E. w-g. M. ♄.) leaves unequally gash-toothed, shortly 3-cleft, pubescent on the petioles, nerves and margins. *S.*

Exotic.

vinifera, (wine grape. J. ♄.) leaves sinuate-lobed, naked or downy.

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(1) canina, Wr.? striata, E.? (2) flavescens, W. album, Wr. (3) taurina, Wr. (4) cordifolia, Mx. (5) intermedia, M. labrusca, Wr. (6) odoratissima, Donn.

Southern.

rotundifolia, Mx. (bullet grape. E. M. ♄.) leaves lucid on both sides, cordate, unequally toothed: flowers of the racemes in many small heads: berries large.

palmata, Vahl. (♄.) leaves cordate, palmate, glabrous; divisions lanceolate, gashed: umbels racemed. Ampelopsis.

Vitis, AMPELOPSIS.

21—1. VITTARIA. 55. 5.

Southern.

lineata, (1) (E. 2f.) frond linear, very long, pendulous: fruit dots solitary, within the margin. The leaves are grass-like. Ph. Osmunda.

W.

21—2. WEISSIA. 56. 4.

microdonta, small: leaves lanceolate, long-acuminate, crisped and twisted when dry, having a fascicle of ducts or tubes: peduncle pale: capsule oblong-ovate: lid beaked: teeth of the peristome narrow.

curvirostra, leaves lanceolate, twisted, imbricate, spreading: capsules slender ovate-cylindric: lid beaked, recurved.

capillacea, leaves lance-subulate, serrulate, somewhat rigid: nerves thick: stem simple, slender: germs oblong-ovate, erect, smooth: lid subulate-beaked, obtusish at the apex. Trematodon.

6—6. WENDLANDIA. 11. 77.

Southern.

populifolia, (E. w. J. ♄.) stem climbing; younger branches pubescent, striate: leaves alternate, petioled, cordate, ovate, mucronate, entire, veined, glabrous above, pubescent beneath. This plant has hitherto escaped the researches of all our botanists. F. Alisma.

3—2. WINDSORIA. 4. 10.

sesleroides, Mx. (2) (red-top. E. Au. 2f.) panicle spreading and flexuous: spikelets all peduncled, about 6-flowered, lanceolate: lower valve of the corol ovate, 5-toothed. 3—5 f. *S.*

Southern.

ambigua, E. (3) (E. S. 2f.) panicle spiked, spreading: spikes ovate, thick, sessile, 5—6-flowered: outer valve of the corol mucronate. 2 f. Festuca.

Windsoria, POA.

Wisteria, THYRSANTHUS.

21—1. WOODSIA, Br. 55. 5.

hyperborea, (4) (flower-cup fern. Ju. 2f.) frond pinnate: leafets 3-parted, or gash-pinnatifid, wedge-form, obtuse, toothed, rough-haired beneath: fruit-dots solitary, at length confluent. Small, in tufts.

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(1) angustifrons, Mx. Pteris, L. (2) poaeformis, N. Poa, Mx. quinquefida, Ph. flava, L. sub-verticillata, P. (3) Poa, E. (4) Polypodium, W. arvanicum, S. Acrostichum, Bolton.

ilvensis, (1) (Ju. 2f.) frond bipinnatifid : divisions oblong, obtuse ; lower ones repand ; upper ones entire, rough-haired beneath : fruit-dots sub-marginal, at length confluent : stipe villose above. Small. Aspidium.

21—1. Woodwardia. 55. 5.

angustifolia, S. (2) (kidney-fern. O. Au. 2f.) barren frond pinnatifid : divisions lanceolate, repand, slenderly serrulate : fruit-bearing frond pinnate ; leafets entire, acute, linear. About a foot high. *S.*

virginica, (3) (Ju. 2f.) frond very glabrous, pinnate : leafets sessile, lanceolate, pinnatifid : divisions oblong, obtuse, crenulate, fertile ones elongated : stipe glabrous, terete. About a foot high. *S.*

Southern.

thelypterioides, Ph. (Ju. 2f.) frond pinnate ; wing leafets sessile, villose at the base, lance-linear, pinnatifid ; sterile ones oblong, obtusish ; fertile ones short-triangular, acute ; all very entire : stipe pubescent, angled. 6 i. Pteris.

X.

19—5. Xanthium. 54. 98.

strumarium, (4) (clott-burr. O. Au. ☼.) stem unarmed, branching : leaves cordate, lobed, serrate, scabrous, 3-nerved at the base : fruit oval, pubescent, with stiff hooked bristles. Has a little the habit of a burdock. 2—3 f. *S.*

orientale, (5) (E. ☼.) stem unarmed : leaves wedge-ovate, sub-3-lobed : fruit in strobiles.

spinosum, (prickly clott-burr. E. Ju. ☼.) having spines in threes : leaves 3-lobed. Lower leaves sinuate-lobed. 1—3 f. *S.* Ambrosia.

Xanthorhiza, Zanthorhiza.

6—3. Xerophyllum. 10. 13.

asphodeloides, (6) (E. w. J. 2f.) filaments dilated towards the base and equalling the corol : racemes oblong, crowded : bracts setaceous : scape leafy : leaves setaceous-subulate. 3—5 f. *S.*

Southern.

tenax, Ph. (7) (W. w. J. 2f.) scape leafy : raceme showy, lax : bracts membranaceous : petals oval : filaments filiform, exceeding the corol : leaves subulate-setaceous, very long.

gramineum, (7) (A. Au. 2f.) scape leafy, panicled : racemes divaricate : bractlets ovate, longer than the pedicels : petals oblong, acuminate, thrice as long as the stamens : leaves linear, channelled, glaucous beneath. 2 f. Tofieldia.

21—6. Xyloma. 58. 1.

acerina, resembling spots, slender, contiguous, sub-rugose, many capsules connate in one body. Sclerotium.

5—1. Xylosteum. 48. 58.

ciliatum, Ph. (8) (fly-honey-suckle, twin-berry. O. w-y. M. ♄.) berries dis-

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(1) Polypodium, W. Acrostichum, L. (2) onocleoides, W. Onoclea nodulosa, Mx. Acrostichum areolatum, L. (3) bannisteriana, Mx. Blechnum, L. (4) americanum, Wr. (5) maculatum, R. (6) setifolium, Mx. Helonias, L. (7) Helonias, Ph. (8) tartaricum, Mx. Lonicera ciliata, M.

tinct : leaves ovate and sub-cordate, margin ciliate, in the young state villose beneath : corol a little gibbous or calcarate at the base : tube ventricose above : divisions short, acute : style exsert. 3—4 f.

solonis, Ea. (swamp twin-berry, y. M. ♄.) berries united in one (never distinct :) two flowers situated on one germ : leaves oblong-ovate, villose. Berries dark-purple. 2 f.*

villosum, Mx. (♄.) branches villose : leaves oblong-oval, obtuse, sub-tomentose—very villose : peduncles short : (berries distinct, Ph. sed quere.) Berries blue. Perhaps a variety of the foreign vulgare. Ph.

Symphoria.

Xylostroma, RACODIUM.

3—1. XYRIS. 6. 13.

caroliniana, W. (1) (yellow-eyed grass. E. y. Au. 2[.) leaves linear, grass-like : stem or scape 2-edged : head-ovate-acute : scales obtuse. 9—18 i. *S.*

brevifolia, Mx. (y. Au. 2[.) leaves sword-subulate, short : calyx longer than the bracts, somewhat gash-toothed. 12 i. *S.*

Southern.

fimbriata, E. (E. J. 2[.) heads lax-imbricate : calyx much longer than the bracts, fimbriate : leaves long, ensiform. 2 f.

juncea, Bald. (E. M. 2[.) leaves terete, hollow, acute : scape terete, sheathed at the base : bracts roundish : head oval. 6—12 i.

indica, W.? (y. J. 2[.) leaves very long, grass-like, tortuous : scape tortuous : head globose : scales roundish, obtuse. Schollera.

Y.

6—1. YUCCA. 10. 14.

Southern.

filamentosa, (silk-grass, bear-grass. w. Au. 2[.) stemless : leaves broad-lanceolate, entire, filamentose on the margin : stigmas recurved-spreading. 2—5 f.

angustifolia, Ph. (W. w. Ju. 2[.) stemless : leaves long-linear, glaucous, mucronate, somewhat filamentose on the margin : capsules large, oblong-obovate.

recurvifolia, Sy. (E. p-w. Ju. ♄.) caulescent : leaves lance-linear, recurve-deflected, rarely filamentose on the margin : inner petals broadest. 3 f.

gloriosa, (petre. L. w. Au. ♄.) caulescent, branching : leaves broad-lanceolate, plaited, very entire : petals lanceolate. 2—4 f.

alnifolia, (2) (L. w. Au. ♄.) caulescent, branching : leaves lance-linear, with callous crenatures, rigid. 10—12 f. Fritillaria.

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* This plant was discovered in New-Hampshire, by Dr. Solon Smith of New-Haven, Con. in the year 1815. I published it in 1817. Prof. Dewey found it near Williams College the same year. I found it in Pittsfield, Mass. three years afterwards. It has since been published under the name *villosum*, by several botanists ; but I know not on what authority. No one pretends to have seen Michaux's plant, and his description of the villosum, if intended for this plant, is defective without a parallel in his work. As well might a botanist claim all future discoveries in the genus Acer, if he had once said, that the maple tree had a woody stem. It may have been seen by Michaux ; but surely it will be in season to deny Dr. Smith's discovery, after we receive some evidence of it.

(1) jupicai, Mx. flexuosa, M. (2) draconis, E.

Z.

20—12. Zamia. 1. 11.

Southern.

integrifolia, W. (1) (E. ♄.) frond pinnate; leafets lanceolate, roundish-obtuse, attenuate at the base, serrulate on the outside towards the apex: stipe glabrous, somewhat 4-cornered. Juniperus.

19—1. Zanichellia. 2. 13.

intermedia, T. (false pondweed.) anther 2-celled: stigmas dentate-crenate. seed smooth, entire on the back. In salt marshes.

palustris, (Ju. ☉.) anthers 4-celled: stigmas entire: seed toothed on the back. Chara.

5—13. Zanthorhiza. 26. 61.

apiifolia, (parsley yellowroot. p. Ap. ♄.) stem simple: leaves 3-ternate: petioles dilated and clasping at the base: racemes compound, below the leaves. 1—3 f. *S.* Tradescantia.

21—5. Zanthoxylum. 46. 94.

fraxineum, W. (2) (prickly ash, tooth-ache bush. O. g-w. M. ♄.) prickly: leaves pinnate; leafets lance-oval, sub-entire, sessile, equal at the base: umbels axillary. 8—12 f. *S.*

Southern.

tricarpum, Mx. (L. J. ♄.) leaves pinnate, very glabrous; leafets petioled, lance-falcate, crenate-serrate: petioles unarmed: flowers with corols: capsules about in threes. Both species are aromatic and pungent. 12—20 f. Acnida.

13—2. Zapania. 40. 40.

nodiflora, Mx. (3) (fog-fruit. w. Ju. ♃.) leaves wedge-obovate, serrate above: spikes head-conic, solitary, long-peduncled: stem creeping. *S.*

lanceolata, (4) (w. Ju. ♃.) leaves lance-linear, sharply serrate: spikes head-conic, solitary, long-peduncled: stem creeping. *S.*

Southern.

cuneifolia, T. & J. (W.) stem herbaceous, procumbent, ? somewhat scabrous. leaves narrow-wedge-form, thick, nearly glabrous, sharply and coarsely toothed towards the apex: bracts wedge-obovate, dilated at the apex, mucronate: little heads solitary, globe-ovate, long-peduncled. Herpestis.

19—3. Zea. *A.* 10.

Southern.

mays, (indian corn. y-g. Ju. ☉.) leaves lance-linear, entire, keeled. Var *precox*, (dwarf corn) stem low: seeds mostly 8-rowed. Tragia.

5—3. Zigadenus.

glaberrimus, Mx. (zigadene. w. J. ♃.) scape leafy: bracts ovate, acuminate: petals acuminate: leaves long, recurved, channelled. Near Rochester, N. Y. 2—4 f. *S.*

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(1) pumila, L. (2) ramiflorum, Mx. Clava herculis, L. (3) Lippia, Mx. Verbena, L. (4) Lippia, Mx.

Southern.

elegans, Ph. (W. w. J. 2[.) scape nearly naked: bracts linear: petals ovate, acute. Veratrum.

Zigadenus, MELANTHIUM.

17—2. ZINNIA. 49. 55.

Exotic.

violacea, (blood marygold. r. Ju.) leaves ovate-acute, sessile, sub-crenate: apex of the chaff or scales fimbriate-serrate.

Southern.

multiflora, (W. r. S. ☼.) leaves opposite, lance-ovate, sub-petioled, flowers peduncled. Perhaps not a native of North America. Starkea.

19—6. ZIZÁNIA. 4. 10.

aquatica, Ph. (1) (water oats, wild rice. Au. ☼.) panicle pyramid-form: staminate flowers below, spreading; pistillate flowers above, spiked: pedicels clavate: flowers long-awned: seed long, cylindric, becoming black. Very abundant in the great western lakes. Schoolcraft. 4—8 f. *S.*

miliacea, Mx. (Au.) panicle effuse, pyramidal: glumes short-awned: staminate and pistillate flowers intermixed: seed ovate, smooth: leaves glaucous: style one. 6 f. *S.* Hydrochloa.

Zizania, HYDROCHLOA.

5—1. ZIZYPHUS. 43. 95.

Southern.

volubilis, (2) (supple jack. E. g. y. J. ♄.) unarmed: leaves ovate, ribbed, very entire, sub-undulate: umbels axillary, peduncled: stem twining. Rhamnus.

16—10. ZORNIA. 32. 93.

Southern.

tetraphylla, Mx. (E. y. Ju. 2[.) leaves digitate; leafets 4, lanceolate, glabrous: spikes axillary, peduncled: flowers alternate, 2-bracted: bracts roundish. 2 f. Sesbania.

19—1. ZOSTERA. 2. 7.

marina, (grass-wrack, sea eel-grass. L. Au. 2[.) leaves entire, somewhat 3-nerved: stem teretish. Leaves long: flowers minute. In bays and salt-marshes. Caulinia.

21—4. ZYGNEMA. 57. 2.

nitida, joints about equalling the diameter: the spiral lines crossed, slender, arched: seeds oval. Frequent in ditches. Hardly adheres to paper on drying. Oscillatoria.

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(1) clavulosa, Mx. (2) Rhamnus, L.

END OF SPECIES.

ENUMERATIONS

OF GENERA AND SPECIES DESCRIBED IN THIS MANUAL.

TOTAL NUMBER OF GENERA			1,125
Phenogamous,	Indigenous	858	
	Exotic	84	
Cryptogamous,		183	
Phenogamous,	Exclusively Northern	156	
	Exclusively Southern	220	
	Northern and Southern	482	
TOTAL NUMBER OF SPECIES			5,125
Phenogamous,	Indigenous	3,885	
	Exotic	355	
Cryptogamous,		885	
Phenogamous,	Exclusively Northern	942	
	Exclusively Southern	1,422	
	Northern and Southern	1,521	

N. B. The number of species common to the Northern and Southern districts, will probably be greatly increased on farther examination, as botanists increase.

CLOSING REMARKS BY THE AUTHOR.

The first proof-sheet of this book was sent to me on the 12th of January last. It has, therefore, been four months in the press. During the whole of this period no pains have been spared to make it as perfect as possible. Still we had many errors to correct; and, probably, have left many for our friends to correct for us.

It is proper for me to state, that Dr. WILLIAM AIKIN, of Rensselaer School, and HEZ. H. EATON, Adjunct Prof. in the school, prepared the species, after the genus Carex. I assisted no farther than to supervise the work. I decided in doubtful cases, compared their translations with the original authors, examined the proof-sheets, and gave all the new specific names. But they selected, arranged, compared, and transcribed the whole. They compared descriptions with plants in their extensive collections, and suggested numerous valuable improvements.

Though this Manual has been before the public, heretofore, as a mere translation and compilation; more descriptions have been improved in the several editions, than in most treatises which pass for original works. On carefully comparing the descriptions of standard authors with specimens in the living state, we have found it necessary to alter, more or less, the descriptions of between six and seven hundred species.

In regard to Cryptogamous plants, the general student will find as much given here as his time will allow him to study; and this composes most of the well defined genera, and the most common species. Whoever will study Cryptogamous plants extensively must resort to European authors. The celebrated Schweinitz has compared 2000 species of American Fungi with European species, and finds them agree in most cases. It is his opinion the Cryptogamous plants are nearly the same in all countries. We may soon expect extensive treatises on these families of plants, from Schweinitz, Torrey, Beck and Halsey.

To those who are unacquainted with the expense of printing in such fine type, I will observe; that the matter contained in this volume would fill four octavos, if spread out in the usual way, and cost at least $10 the set. It is thus condensed, so as to become a pocket companion in fields and woods.

May 13, 1829.

ERRATA.

☞ The corrections must be referred to by the pen, before the book is used; as some of the errors are important.

Page 9. line 25, "compound" must be compared; and line 35, figure 16, must be 15.

30. "*pentagynia*" in brackets must be *pentandria*.

46. "AGTAEA" must be ACTAEA.

55. Order XIII. must be XII.

56. "PATALOSTEMON" must be PETALOSTEMON.

66. Order X. "DECANDRIA" must be Order XII. POLYANDRIA.

68. Erase "Manisuris," it is described at p. 290.

70. At the top, strike out "B *.stem* woody," and interline the same above Quercus, the last line on the preceding page.

When the generic name is wrongly spelled, or the natural orders wrongly numbered, turn to the same name where the species are described for correction. The letter S, and other evidences of localities, are probably set wrong in a few cases; and they are left out in all cases of doubt.

ADDENDA,

According to the alphabetical arrangement of Genera.

ACACIA. Strike out the species *brachyloba*, and *glandulosa*. They are described under Darlingtonia.

ACALYPHA. Species *virginica*, word "obscurely" must be obtusely—word "*dipnoty*" must be density.

ACERATES. Asclepias obovata, p. 118, belongs to this genus.

ACHYRANTHES. Spec. *vermicularis*, belongs to genus Philocerus, p. 327.

ACTAEA. Strike out spec. *pachypoda*.

ACTINOMERIS. Add spec. *pauciflora*, N. (Florida) simple? leaves oblong or oblong-ovate, serrulate, decurrent: peduncle few-flowered, long and naked.

AESCULUS. Spec. "*monostachya*" should be *macrostachya*.

AETHUSA. Add spec. *cynapium*, L.

ALISMA. Strike out spec. *subulata*.

ALLIONIA. Add spec. *multiflora*, T & J. (W.) pulverulently pubescent: leaves broad-cordate, acute, very entire: involucre 7 or 8-flowered, 5-cleft: flowers sub-pentandrous: stamens scarcely exsert. Flowers very large.

ANDROPOGON. *ambiguum*, belongs under Gymnopogon.

18—1. APLECTRUM. 7. 21. Spec. *hyemalis*, described under Corollorhiza, at p. 186.

17—1. APOGON. Above Aquilegia, p. 110. Spec. *humilis*, E. (E. y. Ap. ☉.?) stem branching, glabrous: radical leaves oblong, narrow, sub-ovate, sessile; cauline ones strap-form, acute, entire, sessile, slightly glaucous: flowers terminal, sub-umbelled. 6—12 i. Southern States.

ARENARIA. Spec. *peploides*, L. (L.) leaves ovate, acute, fleshy.

Aethusa. Spec. *medeoloides*, must be erased, it is described at p. 335, under Pogonia.

Asclepias. In some of the species, such as the *purpurascens*, Lc. nectary is used when horn of the nectary is meant. This may be determined by the sense. The species *viridis*, should be placed under Podostigma, page 335.

Astragalus. Spec. *triphyllus*, belongs to genus Phaca.

Avicennia. To follow Sesamum, p. 52. Gen. Char. Calyx 5-parted: corol 2-lipped, upper lip square: capsule coriaceous, rhomboid, 1-seeded. 40. 45.

Spec. *tomentosa*, W. (mangle. E. ♄.) leaves oblong, obtuse, tomentose beneath. Flowers in sub-sessile clusters. 20 f.

Azolla. To follow Azalia, p. 131. Spec. *caroliniana*, (Cayuga Marsh,) leaves distichous, imbricate, ovate-oblong, obtuse, spreading. Floating, leaves reddish beneath.

Batschia. Spec. "*imeling*," should be *gmelini*.

Brickellia. Genus described at p. 60. The Species, *cordifolia*, is described under Vernonia.

Buxus. Genus described at p. 143.

Calligonum. Genus described at p. 145.

Capsicum. Spec. *baccatum*, L. (bird pepper. ♄.) stem smooth: peduncles in pairs. Southern states or Florida.

Carex. Spec. "*retraflexa*" should be *retroflexa*—"*scoporia*" should be *scoparia*—"*okesii*" should be *oakesii*.

Clematis. Spec. *hirsutissima*, must be struck out; for it is described under Anenome *ludoviciana*.

Cimicifuga. See p. 288, a note. Gen. Char. Calyx 4-leaved: petals (or nectaries) 4, pitcher-form, cartilaginous: capsules 4: seeds scaly: petals, pistils, and calyx leaves, variable.

Companula. Add these *Exotics*.

medium, (canterbury bells. b. Au. ♂.) capsule 5-celled, covered: stem undivided, erect, leafy: flowers erect.

speculum, (venus' looking-glass. b. Au. ☉.) stem very branching, diffuse: leaves oblong, sub-crenate: flowers solitary, often destitute of the scales at the base.

lanuginosa, (rough bells.) woolly hispid: leaves ovate, rugose, crenate, tapering into the petiole: stem simple: flowers sub-sessile, erect-spreading.

Convolvulus *purpureus* grows west of the Missisippi.

Cynanchum. Add Spec. *scoparium*, N. (E. g-y. ♄.) stem twining, striated, naked (excepting young branches:) branches opposite: leaves linear, remote umbels sessile, small-flowered. Southern states.

Cyrilla. Add Spec. *paniculata*, N. (Florida.) leaves coriaceous, wedge-oblong, obtuse: flowers panicled: petals oblong, spotted or blotched.

Erythronium *americanum*. The stigma is 3-lobed.

Fuirena *scirpoidea*, should be placed under genus Vaginaria, p. 435.

Glycine. Genus described at p. 230.

Hypnum *cooleyanum*, Sl. stem prostrate, bipinnate with the divisions alternate and opposite: peduncles long, slender, twisted when dry: capsules shortish, striate, recurve-arched, becoming fulvous: leaves recurved, nerveless, teretely sub-semi-cylindrical, broad at the base, long subulate towards the apex. On decaying logs in swamps. First found by Dr. Cooley, in Deerfield, Mass. Described from a dried specimen by H. H. E.

MYOSURUS. Genus described at p. 300.

NAJAS. Genus described at p. 301.

NEMOPHILA. Genus described at p. 302.

PIPER. Genus described at p. 331.

PSYCHOTRIA. Genus described at p. 350.

RESEDA. Genus described at p. 360.

STYLANDRIA. Erase this genus

TORREYA. Genus described at p. 420.

TURNERA *cistoides*, [genus described in place at p. 33, but species omitted.] peduncles axillary, leafless : leaves serrate near the summit. Grows in Savannah, Geo.

VINCA. Genus described at p. 441.

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BOTANICAL GRAMMAR

AND

DICTIONARY.

GRAMMAR OF BOTANY.

It is not necessary that a student in Botany should remember the definitions of all the terms used in the descriptions of plants. There are some terms, however, which ought to be studied in systematic order. Such terms, so systematized, may constitute a *grammar of botany*, or a botanical nomenclature.

The annexed grammar of botany comprises the most important elementary terms; and all that a student should store up in his memory.

Elementary Organs.

Every plant is either phenogamous or cryptogamous.

Phenogamous plants have their stamens and pistils sufficiently manifest for examination.

Cryptogamous plants either lose the staminate organs before they become manifest, or they are too minute for inspection.

The *Classes*, *Orders* and *Genera* of the Linnean system, are founded wholly on the seven elementary organs of fructification.

These are,

1. *Calyx.* The outer or lower part of the flower, generally not coloured.*
2. *Corol.* The coloured blossom, within or above the calyx.
3. *Stamens.* The organs immediately surrounding or adjoining the central one; consisting of mealy or glutinous knobs, either sessile or supported on filaments.
4. *Pistil.* The central organ of the flower, whose base becomes the pericarp and seed.
5. *Pericarp.* The covering of the seed, whether pod, shell, bag, or pulpy substance.
6. *Seed.* The essential part, which contains the rudiment of a new plant.
7. *Receptacle.* The base which sustains the other six parts, being at the end of the flower stem.

Subdivisions of the Calyx.

Every calyx is either *monophyllous*, consisting of one leaf; or *polyphyllous*, consisting of more than one leaf. Either kind may be:

* In the language of Botany, any part of a plant is not coloured when it is green; as the calyx of the apple is said not to be coloured, because it is green, and that of the nasturtion is coloured, because it is not green.

1. *Perianth.* That calyx which adjoins and surrounds the other parts of the flower, as of the apple, rose, &c.

About two thirds of all plants have perianths.

2. *Involucre.* That calyx which comes out at some distance below the flower, and never encloses it. It is commonly at the origin of the peduncles of umbels, and sometimes attached to other aggregate flowers.

Involucres are either *universal*, placed at the origin of the universal umbel, as in caraway, lovage, &c.; or *partial*, placed at the origin of a particular umbel, as in coriander; or *proper*, placed beneath a single flower.

3. *Spathe.* A kind of membrane which at first encloses the flower, and after it expands is left at a distance below it, as daffodil, onion, Indian turnip.

4. *Glume.* That kind of calyx which is composed of one, two, or three valves or scales, commonly transparent at the margin, and often terminated by a a long awn or beard. All grasses have glume calyxes.

5. *Ament.* An assemblage of flower-bearing scales, arranged on a slender thread, or long receptacle; each scale generally constituting the lateral calyx of a flower, as in the willow, chesnut, pine, &c.

6. *Calyptre.* The cap or hood of pistillate mosses, resembling in form and position an extinguisher set on a candle. Conspicuous in the common hair-cap moss.

7. *Volva.* The ring or wrapper at first enclosing the pileus or heard of a fungus; and which after the plant has arrived to maturity, contracts and remains on the stem or at the root.

Subdivisions of the Corol.

Every corol is either *monopetalous*, consisting of one petal or flower-leaf; or *polypetalous*, consisting of more than one.

**Monopetalous Corols are,*

1. *Bell-form.* Hollowed out within the base, and generally diverging upwards, as Canterbury bells, gentian, &c.

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* It is proper to inform the student, in this place, of two important facts, connected with the descriptions of plants, which are made by references to natural and artificial forms.

1. A certain number of forms were assumed by Linneus as standards for references; none of which are to be considered as perfect. But when any one of these forms is referred to, it is to be understood, that it is nearer the true form of the organ under consideration, than any other of these standard forms.

2. All standard forms are either drawn from well-known natural bodies, or from artificial bodies or implements known to the ancients. Some of the most common NATURAL bodies are the egg, lips of animals, the throat, head, knee, the heart, the kidneys, the hand, bird's feet, spur, feather, a bay, a tooth, hair, bristles, silk, down, eye-lashes, veins, nerves, wings, ears, claws, &c. Some of the most common ARTIFICIAL bodies or implements are, a spike, spindle, circle, oval, lance, line, awl, arrow, halbert, viol, lyre, saw, shield, cross, sabre, needle, bell, keel, club, cone, leather, cup, greek letter delta, fork, urn, wheel, &c.

2. *Funnel-form.* With a tubular base, and the border opening gradually in the form of a funnel, as the thorn-apple, morning-glory.

3. *Salver-form.* Having a flat spreading limb or border, proceeding from the top of a tube, as lilac, trailing arbutus, &c.

4. *Wheel-form.* Having a spreading border without a tube, or with an exceeding short one, as borage, laurel, mullein.

5. *Labiate.* A labiate corol is divided into two general parts, somewhat resembling the lips of a horse or other animal. Labiate corols are either *personate*, (with the throat muffled) as snap-dragon; or *ringent*, (with the throat open) as mint, mother-wort, catnip, monkey-flower.

Polypetalous Corols are,

1. *Cruciform.* Consisting of four equal petals spreading out in the form of a cross, as raddish, cabbage, mustard, &c.

2. *Caryophylleous.* Having five single petals, each terminating in a long claw, enclosed in a tubular calyx, as pink, catch-fly, cockle, &c.

3. *Liliaceous.* A corol with six petals, spreading gradually from the base, so as altogether to exhibit a bell-form appearance, as tulip, lily, &c.

4. *Rosaceous.* A corol formed of roundish spreading petals without claws, or with extremely short ones, as rose, apple, strawberry, &c.

5. *Papilionaceous.* A flower which consists of a banner, two wings and a keel, as pea, clover, &c. supposed to resemble a butterfly.

If a corol agree with none of the above descriptions, it is called *anomalous.*

Subdivision of the Stamen.

1. *Anther.* The knob of the stamen, which contains the pollen; very conspicuous in the lily, &c. Never wanting.

2. *Pollen.* The dusty, mealy, or glutinous substance contained in the anthers. Never wanting.

3. *Filament.* That part of the stamen which connects the anther with the receptacle, calyx or pistil. Often wanting; generally thread-form when present.

Subdivision of the Pistil.

1. *Stigma.* The organ which terminates the pistil; very conspicuous in the lily, and hardly distinguishable in the Indian corn. Never wanting.

2. *Germ.* That part of the pistil which in maturity becomes the pericarp and the seed, as in the cherry, pompion. Never wanting.

3. *Style.* That part of the pistil which connects the stigma and the germ; very conspicuous in the lily; wanting in the tulip.

Subdivision of the Pericarp.

1. *Silique.* That kind of pod which has a longitudinal partition, with the seeds attached alternately to its opposite edges, as radish, cabbage, &c.

2. *Legume.* A pod without a longitudinal partition, with the seeds attached to one suture only, as the pea, &c.

3. *Capsule.* That kind of pericarp which opens by valves or pores, and becomes dry when ripe, as the poppy, which opens by pores, and the mullein by valves.

4. *Drupe.* That kind of pericarp which consists of a thick fleshy or cartilaginous coat enclosing a nut or stone, as in the cherry, in which it is said to be *berry-like;* and in the walnut, where it is *dry.*

5. *Pome.* A pulpy pericarp without valves, which contains within it a capsule, as apples, quinces, &c.

6. *Berry.* A pulpy pericarp enclosing seeds without any capsule, as currant. grape, cucumber, melon.

7. *Strobile.* An ament with woody scales, as the fruit of the pine.

Subdivisions of the Seed.

1. *Cotyledon.* The thick fleshy lobes of seeds; very manifest in beans, whose cotyledons grow out of the ground in the form of two large succulent leaves. Many plants, as Indian corn, wheat, the grasses, &c. have but one cotyledon; mosses, &c. none.

2. *Corcle.* The rudiment of the future plant, always proceeding from the cotyledon; easily distinguished in chesnuts, acorns, &c.

3. *Tegument.* The skin or bark of seeds; it separates from peas, beans, Indian corn, &c. on boiling.

4. *Hilum.* The external mark or scar on seeds, by which they were affixed to their pericarps. In beans and the like, it is called the eye.

Subdivisions of the Receptacle.

1. *Proper.* That which belongs to one flower only.

2. *Common.* That which connects several distinct florets, as in the sun-flower, daisy, teasel. A common receptacle may be,

3. *Rachis.* The filiform receptacle, connecting the florets in a spike, as in the heads of wheat.

4. *Columella.* The central column in a capsule, to which the seeds are attached.

5. *Spadix.* An elongated receptacle, proceeding from a spathe, as Indian turnip.

General Divisions of Flowers.

1. *Simple.* Having a single flower on a receptacle, as in the quince, tulip, &c.

2. *Aggregate.* Having on the same receptacle several flowers, whose anthers are not united, as teasel, button-bush, &c.

3. *Compound.* Having several florets on the same receptacle, with their anthers united, as sun-flower, china-aster, &c.

4. *Staminate.* Having stamens only, as those in the tassels of Indian corn.

5. *Pistillate.* Having pistils only, as the fertile flower of the cucumber.

6. *Perfect.* Having both stamens and pistils.
7. *Neutral.* Having neither stamens nor pistils.
8. *Complete.* Having a calyx and corol.

Inflorescence.

The manner in which Flowers are situated on Plants.

1. *Whorl.* In which the flowers grow around the stem in rings one above another, as mother-wort, catnip.
2. *Raceme.* Having the florets on short undivided pedicels, arranged along a general peduncle, as currants.
3. *Panicle.* Having some of the pedicels, along the general peduncle of the raceme, divided, as in oats. A panicle contracted into a compact, somewhat ovate form, as in lilac, is called *thyrse.*
4. *Spike.* Having the florets sessile, or nearly so, on the elongated general receptacle, as wheat, mullein, &c.
5. *Umbel.* Having the flower-stems diverging from one place, like the braces of an umbrella, bearing florets on their extremities, as carrot, dill, fennel, &c.
6. *Cyme.* It agrees with the umbel in having its general flower-stems spring from one centre, but differs in having those stems irregularly subdivided, as elder, &c.
7. *Corymb.* In the corymb the peduncles take their rise from different heights along the main stem ; but the lower ones being longer, they form nearly a level or convex top, as yarrow.
8. *Fascicle.* In general external appearance it resembles the umbel, but the foot-stalks are irregular in their origin and subdivision, as sweet-william.
9. *Head.* In this the flowers are heaped together in a globular form without peduncles, or with very short ones, as clover.

Concentric Cylinders of Roots and Herbage.

The Substance of Roots and Herbage consists of :

1. *Cuticle.* The thin outside coat of the bark, which seems to be without life, and often transparent. Very conspicuous on some kinds of birch, cherry, currant-bushes, &c.
2. *Cellular Integument.* The parenchymous substance between the cuticle and bark, generally green. Easily seen in the elder, after removing the cuticle.
3. *Bark.* The inner strong fibrous part of the covering of vegetables.
4. *Camb.* The mucilaginous or gelatinous substance, which, in the spring of the year, abounds between the bark and the wood of trees.
5. *Wood.* The most solid part of the trunks and roots of herbs and trees.
6. *Pith.* The spongy substance in the centre of the stems and roots of most plants. Large in the elder.

Roots.

Roots are the descending parts of vegetables, and are *annual*, *biennial*, or *perennial*. They are of seven kinds.

1. *Branching*. Having the whole root divided into parts as it proceeds downwards, as the oak, apple-tree, &c.
2. *Fibrous*. The whole root consisting of filiform parts, originating immediately from the base of the stem, as many of the grasses.
3. *Creeping*. Extending itself horizontally, and sending out fibrous radicles, as quack-grass.
4. *Spindle*. Thick at the top, and tapering downwards, as carrot, parsnip, &c.
5. *Tuberous*. Roots which are thick and fleshy, but not of any regular globular form. They are *knobbed*, as the potatoe; *oval*, as those of orchis; *abrupt*, as the birdsfoot violet; or *fascicled*, as asparagus.
6. *Bulbous*. Fleshy and spherical. They are either *solid*, as the turnip; *coated*, as the onion; or *scaly*, as the garden lily.
7. *Granulated*. Consisting of several little knobs in the form of grains, strung together along the sides of a filiform radicle, as the wood-sorrel.

Herbage is all the plant except the *root* and *fructification*. It includes *stems*, *leaves* and *appendages*.

Stems.

1. *Tige*, or *proper stem*. The ascending herbage-bearing trunk or stem of all phenogamous plants, except the grasses, as the trunk of the oak, the grape vine, the mullein stalk.
2. *Culm*. The stalk or stem of the grasses, as wheat-straw, sugar-cane, &c.
3. *Scape*. That kind of flower-bearing stem which springs immediately from the root, and is destitute of leaves, as dandelion.
4. *Peduncle*. The flower bearing stem which springs from any part of the stem or branches, as apple, cucumber, &c.
5. *Petiole*. The foot-stalk of the leaf.
6. *Frond*. Applied entirely to cryptogamous plants. It includes the herbaceous, leathery, crustaceous, or gelatinous substance, from which the fruit is produced.
7. *Stipe*. The stem of a fern, of a fungus, of a compound egret, and of a pericarp when elevated from the receptacle; as of maiden-hair, garden caper.

Leaves *are evergreen or deciduous.*

Forms of Simple Leaves.

1. *Orbicular*. Nearly circular, as the leaves of red clover, of cabbage, &c.
2. *Ovate*. Resembling the longitudinal section of an egg, the base being broader than the extremity. One of the most common forms of leaves.
3. *Oval*. Differing from ovate in having both ends equal in breadth.
4. *Oblong*. The length more than twice the breadth, and the sides somewhat parallel.

5. *Obovate.* Ovate with the narrowest end towards the stem, as those of red clover.

6. *Cordate.* Heart-shaped, the hind-lobes being rounded, as lilac.

7. *Obcordate.* Cordate, with the apex or narrowest end towards the stem, as of wild indigo.

8. *Kidney-form.* Hollowed in at the base, with rounded lobes and rounded ends, as mallows.

9. *Lanceolate.* In the form of the ancient lance, tapering from near the base to the apex, and narrow, as the leaves of most of the willows, of ribwort, &c.

10. *Linear.* Continuing of the same width through nearly the whole length; usually pointed at one or both ends, as most grasses.

11. *Awl-form.* Linear at the base, and becoming more or less curved at the point.

12. *Acuminate.* Any kind of leaf terminating more or less suddenly in a point turned towards one edge of the leaf.

13. *Arrow-form.* Shaped like an arrow-head; differing from cordate in having the hind-lobes more or less acute.

14. *Halbert-form.* Hastate. Shaped like an halbert, as field-sorrel, creeping snapdragon.

15. *Guitar-form.* Oblong, broadish near the base, and contracted at the sides.

16. *Lobed.* Deeply parted, and the divisions large, with rounded sides or ends, as the white oak.

17. *Palmate.* Resembling a band with the fingers spread, as horse-chesnut.

18. *Pedate.* Resembling a bird's foot.

19. *Sinuate.* Having the margin hollowed with deep sinuses or bays, as the white oak.

20. *Pinnatifid.* Divided transversely by deep incisions, not extending to the midrib.

21. *Lyrate.* Pinnatifid, with the largest division at the apex, and diminishing from thence to the base, as hedge-mustard.

22. *Runcinate.* Pinnatifid, with the divisions pointing backwards, as dandelion.

Edges of Leaves.

23. *Serrate.* Having sharp notches resembling saw-teeth along the margin, and pointing towards the apex, as those of cherry-trees, roses, &c.

24. *Toothed.* Having projections from the margin of its own substance, which are neither serratures, nor crenatures, as those of blue-bottle.

25. *Crenate.* Having uniform notches on the margin of the leaf, which incline towards the apex, or the base, or neither, as gill-overground.

Ends of Leaves.

26. *Emarginate.* Notched at the termination of the midrib.

27. *Retuse.* Emarginate with a shallow sinus.

28. *Obtuse.* Having the apex of the leaf more or less rounded.

29. *Acute.* Terminating in an angle; that is, not rounded.

Surfaces of Leaves.

1. *Hairy.* Having distinct strait hairs.
2. *Downy.* Covered with fine cotton-like down.
3. *Silky.* Covered with soft close-pressed hairs.
4. *Bristly.* Set with stiff hairs.
5. *Ciliate.* Edged with parallel hairs or bristles, resembling eye-lashes.
6. *Nerved.* Furnished with midrib-like fibres running from the base to the apex.
7. *Veined.* Having tendinous fibres variously branched.

Positions of Leaves.

1. *Decurrent.* When the two edges of the leaf extend along the stem below the place of insertion.
2. *Clasping.* Sessile, with the base more or less heart-form, so as entirely or in part to surround the stem.
3. *Sheathing.* With the leaf prolonged down the stem, so as to cover it, in the manner of the grasses.
4. *Perfoliate.* Having the stem passing through the leaf.
5. *Connate.* Leaves opposite, with their bases united.
6. *Peltate.* With the foot-stalk attached to the lower side of the leaf, so as to resemble a shield.
7. *Opposite.* Standing at the same height with base against base.
8. *Whorled.* Surrounding the stem in horizontal rings or rows.
9. *Imbricate.* Lying over each other like shingles on a roof, so as to "break joints."
10. *Fascicled.* Growing in bunches from the same point, as leaves from white pine.
11. *Radical.* Proceeding immediately from the root.

Compound Leaves.

1. *Ternate.* Having three leafets proceeding from the end of one petiole.
2. *Biternate.* Twice ternate; when the petiole is ternate, and each division bears three leafets.
3. *Triternate.* Three times ternate.
4. *Pinnate.* With distinct leafets arranged on opposite sides of the same petiole.
5. *Bipinnate.* Twice pinnate.
6. *Tripinnate.* Thrice pinnate.
7. *Interruptedly pinnate.* Having smaller leafets dispersed among the larger, as potatoe.

Appendages.

1. *Stipule.* A leafet or scale at, or near, the base of a petiole.
2. *Bract.* A leaf among or near the flowers, different from the other leaves of the plant.
3. *Thorn.* A sharp process from the woody part of a plant.
4. *Prickle.* A sharp process from the bark, as those on raspberry bushes, &c.
5. *Sting.* Hair-like processes mostly from the leaves, as nettles.
6. *Gland.* A roundish, generally minute, appendage to different parts of plants.
7. *Tendril.* The filiform appendage by which climbing plants support themselves on other bodies.

NUMERALS.

The Latin and Greek numerals are so frequently compounded with other words by botanical writers, that an English student ought to commit them to memory, as here laid down.

LATIN.	NOS.	GREEK.	
Unus	1	Monos	single.
Bis	2	Dis	twice.
Tres	3	Treis	thrice.
Quatuor	4	Tettares	
Quinque	5	Pente	
Sex	6	Ex (pronounced hex)	
Septem	7	Epta (pronounced hepta)	
Octo	8	Okto	
Novem	9	Ennea	
Decem	10	Deka	
Undecem	11	Endeka	
Duodecem	12	Dodeka	
Tredecem	13	Dekatreis	
Quatuordecim	14	Dekatettares	
Quindecim	15	Dekapente	
Sexdecim	16	Dekaex	
Septendecim	17	Dekaepta	
Octodecim	18	Dekaokto	
Novendecim	19	Dekaennea	
Viginti	20	Eikosi	
Multus	Many	Polus	

LINNEAN CLASSIFICATION.

Plants are classified upon two distinct plans; the Artificial and Natural. The object of the Artificial system is merely to furnish a method for ascertaining the name of a plant. The object of the Natural system is to bring together into small groups, plants which resemble each other in their botanical affinities, sensible qualities and medicinal properties. The Artificial system has been very aptly compared to the dictionary, and the Natural to the grammar of a language.

Artificial System.

The art of searching out the name of a plant is denominated the analysis of the plant. It is, in truth, an elegant illustration of the *Analytical method* of logic; as the construction of a genus, order and class, is of the *Synthetical method.*

When we analyze a plant by the aid of the artificial system, our final purpose is to ascertain the specific name, by which it was called by the first botanist, who *published* a description of it. But in doing this, we trace it through several intermediate steps. Species are grouped together under generic names—genera under orders—orders under classes. By this arrangement much labour is saved. For example, we see the common wild strawberry, for the first time; and are desirous to learn its name. By comparing the proper organs (to be described hereafter) with the description of the classes, we find it belongs with the group of plants, which constitute a class, called *Icosandria.* This class is subdivided into orders, and we find our plant is to be referred to the order *Polygynia.* Here we find the name of several genera—such as the rose, the raspberry, the strawberry, the five-finger, the avens, &c. On comparing our plant with all the genera under this order, we find it will agree with none but the strawberry.

On turning to the strawberry (under the botanical name *fragaria)* we find there are several kinds of strawberry. Each kind is called a *species*, as the English strawberry, haut-boy strawberry, pine-apple strawberry, wild strawberry, &c. are different species. On carefully comparing our plant with the descriptions of all the species, we find it will agree with none but the wild strawberry (virginiana.) Thus we arrive at the generic name *strawberry*, (fragaria) and specific name *wild* (virginiana.)

The Linnean Artificial classes are founded upon the four following circumstances of the stamens; *number*, *position*, *relative length*, and *connexion.* The first *ten* classes are distinguished by the number of stamens—the *eleventh* and *twelfth* by number and position—the *thirteenth* and *fourteenth* by number and relative length—the *fifteenth*, *sixteenth* and *seventeenth* by connexion—the *eighteenth*, *nineteenth* and *twentieth* by position. The *last* or *twenty-first* class, being a natural one, is not distinguished by any circumstance of the stamens.

The first twelve classes are named by prefixing Greek numerals expressive of the number of stamens to ANDRIA; *which is a Greek derivative, used metaphorically for stamens.*

1. Monandria, includes those plants which bear perfect flowers, with but one stamen in each. As the blite and samphire. It is a very small class.

2. Diandria, includes those plants which bear perfect flowers, with two stamens in each. As hedge-hyssop and lilac. Part of this class of plants bears naked seeds, and forms a natural union with those of the first order of the fourteenth class; as sage, rosemary, mountain mint.

3. Triandria, includes those plants which bear perfect flowers, with three stamens in each. As the iris and oats. Most of the grass-like or culmiferous plants are included in this class. The rough coarse grasses, as bog-rush and cotton-grass, which have closed sheaths or no sheaths to the leaves, have but one style to the pistil. But the finer grasses, as timothy grass and blue grass, which have open sheaths to the leaves, have two styles.

4. Tetrandria, includes those plants which bear perfect flowers, with four stamens in each. As plantain and dog-wood. This class is wholly artificial, consequently the plants included in it are easily found out.

5. PENTANDRIA, includes those plants which bear perfect flowers, with five stamens in each. As comfrey, mullein, tobacco, potatoe, ginseng, parsnip, elder and flax. This is a very extensive class. It includes a natural assemblage of rough-leaved plants, as the borage—of nauseous narcotics, as tobacco and henbane—of umbelliferous narcotics and stomachics, as poison hemlock, water-parsnip and fennel—also many plants which greatly disagree in botanical affinities. The rough-leaved and umbelliferous plants of this class resemble each other so nearly, that students find much difficulty in distinguishing the genera.

6. HEXANDRIA, includes those plants which bear perfect flowers, with six stamens in each. As the lily, tulip, dock and water plantain.

7. HEPTANDRIA, includes those plants which bear perfect flowers, with seven stamens in each. As the chick winter-green and horse-chesnut. This is a very small class, and the number of stamens variable in most flowers found in it.

8. OCTANDRIA, includes those plants which bear perfect flowers, with eight stamens in each. As the marsh cranberry, nasturtion and buckwheat.

9. ENNEANDRIA, includes those plants which bear perfect flowers, with nine stamens in each. As the sassafras and rhubarb. It is a small class and the number of stamens very variable in all the flowers found in it.

10. DECANDRIA, includes those plants which bear perfect flowers, with ten stamens in each. As the whortleberry, pink, cockle and pokeweed. Some flowers in this class have but half the number of stamens required in part of the species of a genus.

11. ICOSANDRIA, includes those plants which bear perfect flowers, with more than ten stamens in each, growing on the calyx. As the peach, apple, thorn, strawberry and rose. Some flowers in this class have but half the number of stamens required; as some species of thorn, &c. It is called Icosandria, because the average number of stamens is about twenty.

12. POLYANDRIA, includes those plants which bear perfect flowers, with stamens more numerous generally than those of any other class growing on the receptacle; as the pond lily and common St. John's wort. If the number of stamens exceeds ten, provided they are placed on the receptacle, the plant belongs to this class. This is an extensive class, and the number of stamens is more variable in this than in all the other classes. When several flowers on the on the same plant have a variable number of stamens placed on the receptacle, we may generally presume that the plant belongs to this class, even if few are found with so many as ten stamens.

The thirteenth and fourteenth classes are named by prefixing the Greek numerals, expressive of the number of long stamens, to DYNAMIA; *which is a Greek derivative, signifying power,—importing that the longest stamens are most powerful.*

13. DIDYNAMIA, includes those plants which bear perfect flowers, with four stamens in each, two of which are longest; as savory, skullcap, snapdragon. This class embraces plants of two very natural assemblages. The first order contains plants with naked seeds; none of which are poisonous. The second order contains plants with seeds in capsules, all of which are said to be poisonous. Most flowers of both orders have labiate corols.

14. TETRADYNAMIA, includes those plants which bear perfect flowers, with six stamens in each, four of which are longest: as mustard, cabbage and rad-

ish. This class embraces a very natural family of plants, bearing cruciform flowers.

The fifteenth and sixteenth classes are named by prefixing Greek numerals, expressive of the number of parcels in which the stamens are united by their filaments, to the word ADELPHIA; *which is a Greek derivative, used to signify brotherhood.*

15. MONADELPHIA, includes those plants which bear flowers, whose stamens are united laterally by their filaments in one group or set; as the hollyhock and mallows. But if the flowers are papilionaceous, they belong to the next class, even if the stamens are so united; as the lupine. Some species of genera which belong to this class, have the stamens broad and membranous at the base, but not attached at all; as some species of geranium. They generally recede from the base of the petals, by approaching the pistil, presenting a columnar form.

16. DIADELPHIA, includes those plants which bear perfect flowers, whose stamens are united laterally by their filaments in two groups or sets; as the pea, bean, and locust-tree. In most cases nine stamens are united in one set, and one stamen stands alone. In some flowers the stamens are all united in one set, which is the proper character of the preceding class; though if the corol is papilionaceous, it belongs here. But if the stamens are not united at all, the plant does not belong here, even if the corol is papilionaceous; as the cassia and wild indigo belong to the tenth class. Genera of the tenth order in this class resemble each other so nearly that students find considerable difficulty in distinguishing them.

The seventeenth class is named by prefixing SYN, *(a Greek derivative from sun) signifying together, to* GENESIA, *a Greek derivative, signifying produced or growing up. The name is intended to signify that the anthers grow up together, or in an united state.*

17. SYNGENESIA, includes those plants which bear perfect, staminate, pistillate, or neutral florets, in which those bearing anthers have them united laterally, so as to form a hollow cylinder. To this definition should be added, that the plants of this class all bear compound flowers, as the sun-flower, thistle, and dandelion, to exclude the lobelia, some species of violet, the jewelweed, &c. which belong to the fifth class, though their anthers are united. This is a very extensive and perfectly natural class.

The eighteenth class is named by prefixing an abbreviation of GYNIA, *a Greek derivative used metaphorically to signify the pistil, to* ANDRIA; *as the stamen and pistil are united in this class.*

18. GYNANDRIA, includes those plants which bear perfect flowers, with the stamens standing on the pistil; as ladies' slipper and orchis. To this definition should be added, that the stamens are inserted at a distance from the place where the calyx and corol are inserted. For the stamens are inserted on the germ of the pistil in all plants of the class SYNGENESIA, &c. but they are inserted in connection with the corol.

The nineteenth and twentieth classes are named by prefixing Greek numerals expressive of the number of plants occupied by the stamens and pistils in order to complete a species, to ŒCIA, *a Greek derivative from oikos, a house. The name is intended to signify, that the stamens and pistils inhabit the same or different tenements.*

19. MONŒCIA, includes those plants which bear perfect flowers, with the staminate and pistillate flowers on the same plant; as the oak, chesnut, and Indian corn.

20. DICŒCIA, includes those plants which bear imperfect flowers, with the staminate and pistillate flowers on separate plants; as the hemp, hop, willow and poplar.

Most plants of these two last classes are united in one class by Pursh, called DICLINIA. Plants of these two classes may be called diclinious plants, or the diclinious classes.

The twenty-first class is named by prefixing CRYPTO, *a Greek derivative, signifying concealed, to* GAMIA, *a Greek derivative, used metaphorically for the strewing of pollen from the anthers upon the stigmas of pistils. It is intended to signify, that the operation of strewing the fertilizing pollen upon stigmas, so manifest in lilies, poplars, Indian corn, &c. is concealed in plants of this class; though it is probable that such operations are as regularly performed in cryptogamous as in phenogamous plants.*

21. CRYPTOGAMIA, includes those plants whose stamens are not manifest, even under the lens. They are known by habit, or natural affinities; as ferns, mosses, liver-worts, sea-weeds, lichens, and fungi.

Remarks. To ascertain the number of stamens contained in the flowers of plants, in difficult cases the student must consider their relation to the divisions of the corol, or of the calyx if the corol is wanting. For if the stamens are all arranged around the pistil in one circular series, they agree in number with the divisions of the corol; or their number is such that they may be divided by the number of the divisions of the corol, or that these divisions may be divided by the number of stamens without any remainder. If the stamens are arranged in more than one series, each series separately taken, is subject to the same rule. Thus all cruciform flowers have two series of stamens. The inner series consists of four stamens, which is equal to the number of petals. The outer series consists of two stamens, by which the number of petals may be divided without a remainder.

In some cases the inner series seems to be governed by the pistil; particularly when the principal series is outermost. As in the buckwheat. Here the main series is outermost, and consists of five stamens, agreeing with the divisions of the coloured calyx. The inner series consists of three stamens, agreeing with the triangular form of the germ. One species of this genus (orientale) has a two-sided germ; and the inner series consists of but two stamens.

By a careful attention to such relations or analogies, we may fix upon the right number for determining the class, in cases where the real number of stamens is very variable, or where they are partly abortive, or too minute for the eye.

ARTIFICIAL ORDERS.

Each class is subdivided into two or more orders. These subdivisions are founded upon the number of styles (or stigmas when styles are wanting)—the covering or nakedness of seeds—the relative lengths of pods—the comparison between disk and ray florets of compound flowers—and the characters of preceding classes. The orders of the class cryptogamia, are distinguished by natural family characters.

The orders of the first twelve classes are distinguished by the number of styles: and named by prefixing Greek numerals, expressive of the number of styles, to GYNIA, *a Greek derivative, used metaphorically for style or stigma. The styles are numbered at their origin on the germ. Their subdivisions above the germ are not taken into view in determining the*

number of the order. Sometimes the style is wanting, leaving the stigma to sit down upon the germ; in such cases the stigmas are numbered in determining the number of the order.

1. MONOGYNIA, includes those plants, in any of the first twelve classes, which bear flowers with but one style, or one sessile stigma in each; as the samphire in the first class, the lilac in the second, the iris in the third, the plantain in the fourth, the mullein in the fifth, the lily in the sixth, the horse-chesnut in the seventh, the scabish in the eighth, the sassafras in the ninth, the prince's pine in the tenth, the cherry in the eleventh, and the poppy in the twelfth.

2. DIGYNIA, includes those plants, in any of the first twelve classes, which bear flowers with two styles, or two sessile stigmas in each; as timothy grass in the third class, and the pink in the tenth class.

3. TRIGYNIA, includes those plants in any of the first twelve classes, which bear flowers with three styles, or three sessile stigmas in each; as the elder in the fifth class, and the buckwheat in the eighth class.

4. TETRAGYNIA, includes those plants in any of the first twelve classes, which bear flowers with four styles or four sessile stigmas; as the holly in the fourth class, and the lizard's tail in the seventh class.

5. PENTAGYNIA, includes those plants in any of the first twelve classes which bear flowers with five styles or five sessile stigmas in each; as spikenard in the fifth class, and cockle in the tenth class.

6. HEXAGYNIA, six styles or sessile stigmas.

7. HEPTAGYNIA, seven styles or sessile stigmas.

8. OCTOGYNIA, eight styles or sessile stigmas.

9. ENNEAGYNIA, nine styles or sessile stigmas.

10. DECAGYNIA, includes those plants in any of the first twelve classes which bear perfect flowers, with ten styles or ten sessile stigmas in each; as the pokeweed in the tenth class.

13. POLYGYNIA, includes those plants in any of the first twelve classes which bear flowers with any number of styles or sessile stigmas above ten; as the rose in the twelfth, and the crow-foot in the thirteenth.

The orders of the thirteenth and fourteenth classes are but two in each. Those in the thirteenth are named by prefixing GYMNO, *a Greek derivative signifying naked, or* ANGIO, *a Greek derivative, signifying bag or sack, to* SPERMIA, *a derivative signifying seed. In the fourteenth, they are named by using a derivative from the Latin* SILIQUA, *a pod; and from the diminutive of the same,* SILICULA.

1. GYMNOSPERMIA, includes those plants in the thirteenth class, which bear seeds without any pericarp. They generally lie naked in the bottom of the calyx; as of mother-wort and hyssop.

2. ANGIOSPERMIA, includes those plants of the thirteenth class; which bear seed in a capsule; as the fox-glove and snapdragon.

1. SILICULOSA, includes those plants of the fourteenth class which bear silique pods, with the length and breadth nearly equal; as the shepherd's purse.

2. SILIQUOSA, includes those plants of the fourteenth class which bear silique pods, with the length considerably exceeding the breadth, always more than double; as the mustard.

The orders of the fifteenth, sixteenth, eighteenth, nineteenth and twentieth classes, are distinguished by the characters of preceding classes, and assume the same names. Therefore when a plant is found in either of these five classes, we inquire which nearest preceding class it would fall into, if its particular classic character were wanting. The answer to this inquiry gives the order.

1. Monandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with but one stamen in each; as orchis in the eighteenth class, and sea eel-grass in the nineteenth.

2. Diandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with two stamens in each; as ladies' slipper in class 18, duckmeat in class 19, and willow in class 20.

3. Triandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with three stamens in each; as blue-eyed grass in class 15, Indian corn in class 19, and the fig in class 20.

4. Tetrandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with four stamens in each; as the nettle in the 19th class and bayberry in the 20th class.

5. Pentandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with five stamens in each; as the passion flower in the 15th class, the hog-weed in the 19th, and the hemp in the 20th.

6. Hexandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with six stamens in each; as water oats in the 19th class, and the green-briar in the 20th.

7. Heptandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with seven stamens in each; as the stork-geranium in class 15.

8. Octandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with eight stamens in each; as the seneca snake-root in class 16, and poplar in class 20.

10. Decandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with ten stamens in each; as the geranium in class 15, and the pea in class 16.

13. Polyandria, when used for an order in the 15th, 16th, 18th, 19th, or 20th class, includes those plants in either of said classes which bear flowers with more than 10 stamens in each; as the hollyhock in class 15, the butternut in class 19, and the moon-seed in class 20.

16. Monadelphia, when used for an order in the 19th or 20th class, (it is never used in 15th, 16th, or 18th,) includes those plants in either of said classes which bear flowers with the stamens united by their filaments in one set; as the cucumber in class 19, and the red cedar in class 20.

The four first orders of class 17, *are distinguished by comparing the disk and ray florets. The first, second and third orders have perfect flo-*

rets in the disk; the fourth has staminate florets only in the disk. The first has perfect florets in the ray, the second and fourth have pistillate, and the third has neutral. The fifth order has partial perianth calyxes to all the florets; whereas none of the other orders have any but the general calyx—the egret, when present being a substitute for the perianth. The orders of this class are named by joining the word POLYGAMIA, *to an appropriate adjective. Polygamia is a Greek derivative used metaphorically to signify numerous organs for carrying on the process of strewing the fertilizing pollen upon stigmas. The adjective* ÆQUALIS *is used to signify, that the organs for furnishing pollen are equalized, or duly proportioned to the stigmas to be fertilized;* SUPERFLUA, *that the pistillate florets in the margin or ray are superfluous, each fertile floret of the disk having stamens and pistils in due proportion;* FRUSTRANEA, *that the ray florets are empty or vain, having no stamens or pistils;* NECESSARIA, *that the ray florets are necessary to the production of seed, the disk florets being all staminate;* SEGREGATA, *that the florets are disjointed, or separated from each other by partial calyxes.*

1. POLYGAMIA ÆQUALIS, includes those plants of the 17th class which bear flowers with perfect florets in both the disk and ray; as the dandelion, thistle, and burdock.

2. POLYGAMIA SUPERFLUA, includes those plants of the 17th class, which bear flowers with perfect florets in the disk, and pistillate florets in the ray; as ox-eyed daisy and yarrow.

3. POLYGAMIA FRUSTRANEA, includes those plants of the 17th class, which bear flowers with perfect florets in the disk, and neutral florets in the ray; as the sun-flower and blue-bottle.

4. POLYGAMIA NECESSARIA, includes those plants of the 17th class, which bear flowers with staminate florets in the disk, and pistillate florets in the ray; as the pot-marygold and high-water shrub.

5. POLYGAMIA SEGREGATA, includes those plants of the 17th class which bear flowers with a perianth to each floret; as the globe-thistle, and elephant's foot.

The orders of the twenty-first class are distinguished by natural family characters: this class embraces six natural families.

1. FILICES, includes all the ferns. These plants bear fruit on the back of the leaves, or some part of the leaves seem as it were metamorphosed into a kind of fruit-bearing spike; as the brake and maiden-hair. A sub order, which may be denominated *Apteres* or *Pteroides*, includes those which bear fruit in a peculiar appendage, as a spike or protuberance in the axils or at the base of the leaves; as ground pine, scouring-rush, and quill-wort.

2. MUSCI, includes the proper mosses. These plants bear, on leafy stems and branches, one-celled capsules opening at the top, where they are crowned by a peculiar lid. The capsules do not open by valves, and are generally elevated on stems or stipes: as hair-cap moss.

3. HEPATICÆ, includes those more succulent moss-like plants, which are called liver-worts. They bear four-valved capsules, which distinguishes them from mosses; as brook liver-wort, and platted moss.

4. ALGÆ, includes the sea-weeds and frog-spittle. These plants bear vesiculous or filamentous fruit, mostly in gelatinous fronds. The fruit

frequently requires a high magnifying power to render it visible; as common sea-weed and river green-hair.

5. Lichens, includes the proper lichens. These plants appear in somewhat circular patches on stones, trees, and old fences; also in fibres suspended from branches, &c. They are generally pale-green, yellow, white, or black; but they are found of all colours. They bear exceedingly minute fruit in receptacles on compact or gelatinous fronds. These receptacles are divided into twelve kinds, translated by Dr. J. E. Smith into clefts, spangles, puffs, buttons, tubercles, hollows, cellules, globules, shields, targets, orbs, and knobs. All of these terms are separately defined in the Dictionary.

6. Fungi, includes such plants as the mushroom, touchwood, mould, blight, &c. They are destitute of herbage, consisting of a spongy, pulpy, leathery, or woody substance; and bear fruit in a naked dilated membrane, or within the substance of the plant.

Remark. For a more full account of these six last orders, the reader is referred to the Natural Orders of Jussieu.

N. B. When a star (*) is placed before generic names at the end of an order, it is to be understood, that though some species of these genera fall here by the rules of the artificial system, yet that as no natural genus must be divided, these stragglers must be referred back to their natural genera for descriptions. They may thus be referred back by aid of the alphabetical arrangement of generic names, where the species are described.

Note 2. When exercising pupils in the artificial classes, the Instructor should direct them to begin by comparing the stamens of the plant under examination, with the characters of the highest numbered class, and to proceed downwards towards the first class. Because the characters of the lower classes are sometimes included in the higher. Thus, in analyzing the lily, the student should proceed as follows:

1. It is not *cryptogamous*, because the stamens and pistils are manifest.
2. It is not *diclinious*, because the stamens and pistils are in the same flower.
3. It is not *gynandrous*, because the stamens do not stand on any part of the pistil.
4. It is not *syngeneccious*, for the flower is not compound.
5. It is not *adelphous*, for the filaments are not united.
6. It is not *dynamous*, for two stamens are not uniformly the shortest.
7. It is not *hyperdecandrous*, for the number of stamens does not exceed ten.
8. It is not *decandrous*, for the number of stamens is not ten.
9. It is *hypodecandrous*, for the number of stamens is under ten

Having traced it to the proper group of classes, the exact number of stamens settle it in the class hexandria.

SYNOPSIS OF ARTIFICIAL CLASSES.

No. of stamens.

1. *Monandria*, one stamen in the flower.
2. *Diandria*, 2 stamens.
3. *Triandria*, 3 stamens.
4. *Tetrandria*, 4 stamens.
5. *Pentandria*, 5 stamens.
6. *Hexandria*, 6 stamens.
7. *Heptandria*, 7 stamens.
8. *Octandria*, 8 stamens.
9. *Enneandria*, 9 stamens.
10. *Decandria*, 10 stamens.

No. and position.

11. *Icosandria*, more than 10 stamens, standing on the calyx.
12. *Polyandria*, more than 10 stamens, on the receptacle.

No. and length.

13. *Didynamia*, 4 stamens, 2 of them uniformly the longest.
14. *Tetradynamia*, 6 stamens, 4 of them uniformly the longest.

Connexion.

15. *Monadelphia*, stamens united by their filaments in one set, anthers generally separate.
16. *Diadelphia*, stamens united by their filaments in two sets, sometimes in one set, with papilionaceous corols.
17. *Syngenesia*, stamens 5, united by their anthers in one set, flowers compound.

Position.

18. *Gynandria*, stamens stand on the germ, style or stigma, separate from the base of the calyx and corol.
19. *Monœcia*, stamens and pistils in separate flowers on the same plant.
20. *Dioecia*, stamens and pistils on separate plants.

Natural.

21. *Cryptogamia*, stamens not manifest, such plants can only be classed by natural families.

Remarks. Culmiferous plants, of the 3d, 6th and 19th classes, must be in fruit, almost mature, when analyzed. Also, all plants in classes 11, 13, 14 and 16; and the umbelliferous, in the 5th. The classes, orders, and most of the generic characters in these classes, may be ascertained after the fruit is sufficiently mature for analyzing.

SYNOPSIS OF ARTIFICIAL ORDERS.

Class 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Orders of these twelve classes are distinguished by the number of styles or sessile stigmas. Monogynia, 1 style. Digynia, 2. Trigynia, 3. Tetragynia, 4. Pentagynia, 5. Hexagynia, 6. Heptagynia, 7. Octogynia, 8. Decagynia, 10. Polyginia, over 10.

13. 14. 1, Gymnospermia, seeds naked. 2, Angiospermia, seeds covered. 1, Siliculosa, pod short. 2, Siliquosa, pod long.

15. 16. Preceding classes, as 1, Monandria. 2, Diandria. 3, Triandria. 4, Tetrandria.

17. 1, Polygamia aequalis, florets all perfect. 2, Pol. superflua, florets of the disk perfect, of the ray pistillate. 3, Pol. frustranea, florets of the disk perfect, of the ray neutral. 4, Pol. necessaria, florets of the disk staminate, of the ray pistillate. 5, Pol. segregata, florets furnished with partial calyxes.

18. 19. 20. Preceding classes, as 5, Pentandria. 6, Hexandria. 7, Heptandria. 8, Octandria. 10, Decandria. 13, Polyandria. 15. Monadelphia.

21. 1, Filices (ferns, brakes, polypods.) 2, Musci (common mosses.) 3, Hepaticæ (liverworts and succulent mosses.) 4, Algae (frog-spittle, water greenhair, sea-weeds.) 5, Lichenes (lichens, dry mosses, patches and specks on trees, rocks, stones, &c.) 6, Fungi (mushrooms, puff-balls, mould, wheat-rust, &c.)

Remarks. When a plant cannot be made to fall under the order or section which its characters seem to indicate, it should be tried through the whole class or whole order, as though no subdivisions were made.

NATURAL ORDERS.

Plants of the same Natural Order agree in habit, and mostly in medicinal properties. When they differ in these properties, the difference is indicated by the odour.

The Natural Orders of Linneus are retained on account of the books in use which refer to them. Jussieu has improved upon Linneus greatly. Medical students ought to arrange their plants according to Jussieu in the herbarium.

Students should be told, that many plants may possess the qualities of the orders to which they belong, though in a very feeble and scarcely perceptible degree.

NATURAL ORDERS OF LINNEUS.

1. Palmæ. Palms and their relatives; as Cocoanut, Frogs bit *Farinaceous diet.*

2. Piperitæ. Pepper and its relatives. In crowded spikes; as Indian turnip, Sweet-flag. *Tonics* and *stomachics.*

3. Calamariæ. Reed-like grasses, with culms without joints; as Cat-tail, Sedge. *Coarse cattle fodder.*

4. Gramina. The proper grasses with jointed culms; as Wheat, Rye, Oats, Timothy-grass, Indian corn. *Farinaceous diet*, and *cattle fodder.*

5. Tripetaloideæ. Corol three-petalled, or calyx three-leaved; as Water plantain, Rush-grass, Arrow-head. *Tonics* and *rough cattle fodder.*

6. Ensatæ. Liliaceous plants with sword-form leaves; as Iris, Blue-eyed grass, Virginian spider-wort. *Antiscorbutics* and *tonics.*

7. Orchideæ. With fleshy roots, stamens on the pistils, pollen glutinous, flowers of singular structure, with the germ inferior; as Ladies' slipper, Arethusa. *Farinaceous diet*, and *stomachics.*

8. Scitamineæ. Liliaceous corols, stems herbaceous, leaves broad, germ blunt-angular; as Ginger, Turmeric. *Warming stomachics.*

9. Spathaceæ. Liliaceous plants with spathes; as Daffodil, Onion, Snow-drop. *Secernant stimulants.**

10. Coronariæ. Liliaceous plants without spathes; as Lily, Tulip, Star-grass. The nauseous scented and bitter are *antiscorbutic* and *cathartic;* the others *emolient.*

11. Sarmentaceæ. Liliaceous corols with very weak stems; as Smilax, Asparagus, Bell-wort. *Tonics* and *secernant stimulants.*

12. Oleraceæ, or Holeraceæ. Having flowers destitute of beauty, at least of gay colouring; as Beet, Blight, Pig-weed, Dock, Pepperage. If nauseous, *cathartic;* others, *mild stimulants* and *nutrientics.*†

13. Succulentæ. Plants with very thick succulent leaves; as Prickly-pear, Houseleek, Purselain. *Antiscorbutic* and *emolient.*

14. Gruinales. Corols with five petals, capsules beaked; as Flax, Wood-sorrel, Crane bill. *Tonics* and *refrigerants.*

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* Which promote the secretion of perspirable matter, &c. &c.

† Nutrientics of Darwin, which serve as nutriment merely, without producing any extraordinary effects.

15. Inundatæ. Growing under water, and having flowers destitute of beauty; as Hippuris, Pond-weed. *Astringents.*

16. Calycifloræ. Plants without corols, with the stamens on the calyx; as Poet's cassia, Seed buckthorn. *Astringents* and *refrigerants.*

17. Calycanthemæ. Calyx on the germ, or growing to it, flowers beautiful; as Willow-herb, Ludwigia, Œnothera. *Tonics.*

18. Bicornes. Anthers with two strait horns; as Whortleberry, Spicy and Bitter Wintergreen, Laurel. *Astringents.*

19. Hesperides. Sweet-scented, leaves evergreen; as Myrtle, Cloves, Mock orange. *Astringent* and *stomachic.*

20. Rotaceæ. Corols wheel-form; as St. John's wort. *Tonics.*

21. Preciæ. Plants with early spring flowers of an elegant specious appearance; as Primrose. *Astringents.*

22. Caryophylleæ. Plants with caryophyllous corols; as Pink, Cockle. *Astringents* and *secernant stimulants.*

23. Trihilatæ. Flowers with three stigmas, capsules inflated and winged, and generally three-seeded, with distinct hilums; as Nasturtion, Horse-chesnut. *Tonics* and *nutrientics.*

24. Coridales. Corols spurred or anomalous; as Fumitory, Touch-me-not. *Narcotic* and *antiscorbutic.*

25. Putamineæ. Plants which bear shell-fruit; as Caper-bush. *Detergent* and *antiscorbutic.*

26. Multisiliquæ. Having several pod-form capsules to each flower; as Columbine, Larkspur, Rue, American cowslip. *Cathartic, narcotic* and *caustic.*

27. Rhœadeæ. Plants with caducous calyxes, and capsules or siliques; as Poppy, Blood-root, Celandine. *Anodyne* and *antiscorbutic.*

28. Luridæ. Corols lurid, mostly monopetalous; flowers pentandrous or didynamous, with capsules; as Tobacco, Thorn-apple, Nightshade, Foxglove. *Narcotic* and *antiscorbutic.*

29. Campanaceæ. Having bell-form corols, or those whose general aspect is somewhat bell-form; as Morning-glory, Bell-flower, Violet, Cardinal-flower. *Cathartics* and *secernant stimulants.*

30. Contortæ. Corols twisted or contorted; as Milk-weed, Periwinkle, Choke-dog. *Cathartics* and *antiscorbutics.*

31. Vepreculæ. Having monophyllous calyxes, coloured like corols; as Leather-wood, Thesium. *Antiscorbutic* and *emetic.*

32. Papilionaceæ. Having papilionaceous flowers; as Peas, Beans, Locust-tree, Clover. *Emolient, diuretic, nutrientic.*

33. Lomentaceæ. Having legumes or loments, but not perfect papilionaceous flowers with united filaments; as Cassia, Sensitive plant. *Emolient, astringent, cathartic.*

34. Cucurbitaceæ. Fruit pumpkin-like, anthers mostly united; as Melons, Cucumbers, Passion-flower. *Cathartic* and *refrigerant.*

35. Senticosæ. Prickly or hairy, with polypetalous corols, and a number of seeds either naked or slightly covered; as Rose, Raspberry, Strawberry. *Astringent* and *refrigerant.*

36. Pomaceæ. Having many stamens on the calyx, and drupaceous or pomaceous fruit; as Pear, Currant, Cherry, Peach. *Refrigerants.*

37. Columniferæ. Stamens united in the form of a column; as Hollyhock, Mallows, Cotton. *Emolient.*

38. Tricoccæ. Having three-celled capsules; as Castor-oil plant, Spurge, Box. *Cathartic.*

39. Siliquosæ. Having silique pods ; as Cabbage, Mustard, Shepherd's purse. *Diuretic, antiscorbutic, nutrientic.*

40. Personatæ. Having personate corols ; as Snapdragon, Monkey-flower. *Deobstruents* and *cathartics.*

41. Asperifoliæ. Corols monopetalous, with five stamens, seeds five, naked, leaves rough ; as Comfrey, Stone-seed, (lithospermum.) *Astringents* and *deobstruents.*

42. Verticillata. Having labiate flowers ; as Sage, Thyme, Catmint, Mother-wort. *Stomachics* and *astringents.*

43. Dumosæ. Bushy pithy plants with small flowers, petals in four or five divisions ; as Sumach, Elder, Holly. *Tonic* and *cathartic.*

44. Sepiariæ. Having mostly tubular divided corols, with few stamens—being ornamental shrubs ; as Lilac, Jasmine. *Astringents.*

45. Umbellatæ. Flowers in umbels, with five-petalled corols, stamens five, styles two, and two naked seeds ; as Fennel, Dill, Carrot, Poison hemlock. *Stomachic* and *narcotic.*

46. Hederaceæ. Corols five-cleft, stamens five to ten, fruit berry-like on a compound raceme ; as Grape, Ginseng, Spikenard. *Tonics* and *refrigerants.*

47. Stellatæ. Corols four cleft, stamens four, seeds two, naked, leaves mostly whorled ; as Bed-straw, Dog-wood, Venus' pride. *Tonics* and *deobstruents.*

48. Aggregatæ. Having aggregate flowers; as Button-bush, Marsh rosemary. *Tonics* and *secernant stimulants.*

49. Compositæ. All the compound flowers ; as Sun-flower, Boneset, Tansey, Thistle. *Tonics* and *secernant stimulants.*

50. Amentaceæ. Bearing pendant aments ; as Hazle, Oak, Chesnut, Willow. *Astringents.*

51. Conferæ. Bearing strobiles ; as Pine, Juniper, Cedar. *Tonics* and *stomachics.*

52. Coadunatæ. Several berry-like pericarps, which are adnate ; as Tulip-tree, Magnolia. *Tonics.*

53. Scabridæ. Leaves rough, flowers destitute of beauty ; as Nettle, Hemp, Hop, Elm. *Astringents.*

54. Miscellaneæ. Plants not arranged by any particular character ; as Pond-lily, Poke-weed, Amaranth. Their qualities are *various ;* but see Jussieu's orders.

55. Filices. All ferns ; as Brakes, Maiden-hair. *Secernant stimulants.*

56. Musci. All mosses ; as Polytrichum. *Cathartics* and *secernant stimulants.*

57. Algæ. All liverworts, lichens, and sea-weeds ; as Jungermannia, Fucus, Usnea. *Tonics.*

58. Fungi. All funguses ; as Mushroom, Toad-stool, Puff-ball, Touch-wood, Mould. *Tonics* and *cathartics.*

NATURAL ORDERS OF JUSSIEU.

The Natural system of Jussieu is founded upon characters greatly resembling, in principle, those which Linneus considers as artificial. But notwithstanding this artificial appearance, the application of these characters forms the basis of a system, which is truly natural.

Plants are distributed into three grand divisions by their seeds. Those plants whose seeds consist chiefly of two fleshy parts, called *Cotyledons*, as the pea, bean, &c. constitute the largest subdivision; called the *Dicotyledonous* division. Those, whose seeds consist chiefly of a single cotyledon, as wheat, barley, Indian corn, &c. constitute a smaller subdivision, called the *Monocotyledonous* division. Those, whose seeds contain no fleshy mass; having nothing analogous to the cotyledon, excepting a thin membrane in some cases, as the mosses, lichens, fungy, &c. constitute the smallest subdivision, called the *Acotyledonous* division.

These grand divisions are subdivided into orders, by a general enumeration of natural characters. The *Acotyledonous* division is directly distributed into six natural orders. But the other two divisions are first distributed into classes, and these classes into ninety-four natural orders, making in the whole one hundred orders.

The two cotyledonous divisions are distributed into classes by the relative position of the germ and the organs of the flower nearest to it. The three positions of these organs are, on the top of the germ, around the germ, and below the germ. The *Monocotyledonous* division is divided into three classes. One class has the stamens on the top of the germ, another has them around the germ, and the third has them below the germ. The *Dicotyledonous* division has nine classes constructed upon the same general plan. The first three classes contain plants *without corols*, the second three classes contain plants with *monopetalous corols*, the third three classes contain plants with *polypetalous corols*. This grand division contains eleven classes however. One of these extra numbers is constituted by subdividing one of the nine classes, by the union and separation of anthers. And the other extra number, (the eleventh class) is chiefly founded on the *diclinious* character of the plants embraced in it. It is, however, the most defective class.

First Division.

ACOTYLEDONS,

or, plants with gongylous seeds.

Order I. Fungi.

Plants of this order are never strictly aquatic, though some of them grow in water and in both damp and dry places indifferently. They never exhibit the verdure of green herbage: but are generally corky, fleshy, or mould-like. They vary much in form and colour: being spherical, hemispheric, columnar, clavate, filamentous, lamellar, capsular, pulverulent; white, yellow, red, black, greenish, &c. The fruit of some is external, of others internal, of others its place can hardly be demonstrated. No plant of this order gives off oxygen gas by the action of light.

Generic names. Sphaeria, Stilbospora, Hysterium, Xyloma, Naemaspora, Tuberculariа, Sclerotium, Tuber, Geastrum, Bovista, Tulostoma, Lycoperdon, Scleroderma, Lycogala, Fuligo, Physarum, Trichia, Arcyria, Stemonitis, Tubulina, Mucor, Onygena, Aecidium, Uredo, Puccinia, Trichoderma, Conoplea, Cyathus, Phallus, Armanita, Agaricus, Merulius, Dedalius, Boletus, Sistotrema, Hydnum, Thelephora, Merisma, Clavaria, Geoglossum, Spathularia, Leotia, Helvella, Morchella, Tremella, Peziza, Aegerita, Isaria, Monila, Dematium, Erineum, Racodium, Himantia, Mesenterica.

Properties. Tonics if dry or corky, cathartics and narcotics if juicy. An alkaline juice exudes from some.

Order II. Algae.

First division. The proper *algae* are mostly aquatics. They are filamentous or membranous, and nearly similar in all their parts. They absorb circulating fluids through their immersed parts only, which are not transfused through other parts. They are generally green or reddish, and give off oxygen gas from the parts under water which are exposed to the sun.

Generic names. Fucus, Chordaria, Laminaria, Delesseria, Sphaerococcus, Halymenia, Ulva, Vaucheria, Hutchinsia, Caramium, Lemania, Conferva, Zygenema, Oscillatoria, Batrachospermum, Rivularia, Nostoc.

Second division. The proper *lichens* are various in texture, form and colour. They are leathery, woody, lamellated, leaf-like, filamentous, white, yellow, greenish, black, &c. Often they appear like green herbage, especially if wet. Some appear like leprous spots on stones and trees, speckled with black, white, or yellow dots. Others in greenish or bluish patches on old fences and walls ; and others in strong light green filaments, suspended from branches of trees, which are falsely called mosses.

They absorb circulating fluids, which are transfused through every part of their substance. Their fructification is in the form of clefts, spangles, puffs, buttons, tubercles, hollows, cellules, globules, shields, targets, orbs, or knobs.

Generic names. Spiloma, Arthonia, Gyalecta, Lecidea, Calicium, Gyrophora, Opegrapha, Graphis, Verrucaria, Endocarpon, Porina, Pyrenula, Variolaria, Urceolaria, Lecanora, Parmelia, Borrera, Cetraria, Sticta, Peltidea, Nephroma, Evernia, Cenomyce, Baeomyces, Isidium, Stereocaulon, Rhizomorpha, Alectoria, Ramalina, Collema, Cornicularia, Usnea, Lepraria.

Properties. Tonics—some contain useful colouring matter, and some are nutritive.

Order III. Hepaticae.

Plants of this order have green or greenish fronds ; some resembling the fronds of *lichens*, others those of *mosses*, but more succulent and cellular. They are always monoecious or dioecious. The barren or staminate flowers contain globules, aggregated together in a kind of calyx, filled with a liquid analagous to pollen. The fertile or pistillate flowers have germs or capsules, either naked or surrounded with pericheths, which are mostly peduncled. The seeds generally adhere to

spirally twisted fibres. The capsules are always 4-celled and destitute of lids; which characters distinguish this order from the next.

Generic names. Riccia, Anthoceros, Marchantia, Jungermannia.

Properties. Tonics and refrigerants.

Order IV. Musci.

Plants of this order are monoecious, dioecious or perfect. The flowers are lateral or terminal, mostly elevated on peduncles. In early flowers Sprengel says, that by the help of a magnifying glass, "organs may be distinctly seen, which consist partly in oblong bud-"like gemmae, supposed formerly to be anthers: and partly in an "aggregation of pistils, intermixed with succulent filaments."

Their capsules are always 1-celled, and open at top by *operculi*, or lids. Over the lids, calyptres are generally placed. Under the lids and surrounding the mouths may be seen a kind of filamentous or denticulate fringe or edging, called teeth.

The seeds are very numerous, resembling fine dust adhering to the inner surfaces of the capsules. The herbage is green and perennial; the leaves are minute and generally imbricated. Mosses flourish most in damp shady situations; and mostly flower early in the spring or late in autumn.

Generic names. Sphagnum, Phascum, Gymnostomum, Schistidium, Anoectangium, Tetraphis, Grimmia, Weissia, Trematodon, Dicranum, Campylopus, Racomitrum, Trichostomum, Barbula, Syntrichia, Didymodon, Splachnum, Ornithotrichum, Ulota, Bartramia, Bryum, Arrhenopterum, Mnium, Timmia, Diplocomium, Meesia, Diphyscium, Buxbaumia, Funaria, Pterigynandrum, Lasia, Leucodon, Neckera, Cryphaea, Pilotrichum, Climacium, Leskia, Pterigophyllum, Hypnum, Fontinalis, Fissidens, Polytrichum, Catharinaea.

Properties. Mostly secernant stimulants; some few are cathartic.

*Order V. Filices.**

Plants of this order are herbaceous and take root in the earth; but bear numerous minute dust-like seeds, like other cryptogamous plants.

First division. The *pterous ferns* bear spherical or reniform 1-celled capsules on the back of winged fronds or on what appears like leaves metamorphosed into fruit-bearing spikes. The leaves are sub-radical, with alternate leafets, or alternate divisions or indentations. They are mostly coiled, or more or less rolled in at their tips, when they first spring from the earth.

Generic names. Acrostichum, Dolypodium, Onoclea, Blechnum, Pteris, Asplenium, Scolopendrium, Woodwardia, Adiantum, Aspidium, Athyrium, Dicksonia, Woodsia, Cheilanthes, Schizaea, Osmunda, Lycopodium, Botrychium, Ophioglossum.

Second division. The *Apteres* bears fruit on spikes, in the axils of leaves, or in the substance of the frond, having no proper winged frond. They are either very leafy or totally leafless. Neither the leaves nor any other parts of apterous ferns are ever coiled.

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* De Lamarck and De Candolle place this order, and the next, among the Monocotyledons.

Generic names. Lycopodium, Equisetum, Isoetes.
Properties. Secernant stimulants.

*Order VI. Naiades.**

Plants of this order are tender aquatics, with a few axillary flowers containing few minute stamens.
Generic names. Caulinia, Chara, Najas, Saururus, Podostemum, Lemna.
Properties. Astringent.

SECOND DIVISION.

MONOCOTYLEDONS,

OR, PLANTS WITH 1-LOBED SEEDS.

CLASS FIRST. Stamens below the pistil.

Order VII. Aroideae.

Plants of this order all bear monoecious flowers, which are sessile on a spadix, and destitute of perianth calyxes. Stamens and pistils are intermixed and stand on the spadix. Fruit a roundish berry. They are almost stemless, with sub-radical leaves; and support the flowers on scape or scape-like stalks.
Generic names. Ictodes, Calla, Zostera, Arum, Orontium.
Properties. Warming stomachics; if nauseous, antispasmodics.

Order VIII. Typhae.

Plants of this order bear monoecious flowers with 3-leaved perianths. Stamens 3 and styles one. Fruit 1-seeded, seed fleshy or farinaceous. They are always aquatics, stems jointless, and leaves somewhat sheathing.
Generic names. Typha, Sparganium.
Properties. Weak tonics.

Order IX. Cyperoideae.

Flowers glumaceous, in spikes or spikelets, glumes 1-valved. The flowers have no proper perianth calyxes; stamens 3, style 1, with two or three stigmas; seeds single, farinaceous, without pericarp. Plants grassy, perennial, of a coarse texture; culm triangular or cylindric; leaves with *closed sheaths* or destitute of sheaths.
Generic names. Kyllingia, Schoenus, Rhynchospora, Cyperus, Mariscus, Dulichium, Scripus, Eriophorum, Tricophorum, Fuirena, Limnetis, Carex, Seleria.
Properties. Tonics. Used for coarse cattle fodder.

Order X. Gramineae.

Flowers glumaceous, generally in spikes or spikelets, but sometimes solitary. Outer glumes generally 2-valved, which serve as calyxes to

* De Lamarck and De Candolle say that this order is artificial and ought to be abolished.

spikelets, or to single flowers when solitary. Stamens 3; stigmas 2, plumose or capillary. Seeds single, farinaceous, without pericarps. Culms cylindric, jointed; leaves alternate, with *sheaths always cleft* throughout their whole extent, on the side opposite to the direction of the leaf.

Generic names. Cinna, Anthoxanthum, Cenchrus, Oryzopsis, Panicum, Digitaria, Cynodon, Paspalum, Aristida, Stipa, Alopecurus, Phalaris, Crypsis, Hordeum, Milium, Agrostis, Saccharum, Muhlenbergia, Leersia, Trichodium, Phleum, Aira, Uralepsis, Elymus, Melica, Eleusine, Secale, Triticum, Lolium, Atheropogon, Uniola, Briza, Sorghum, Dactylis, Poa, Windsoria, Festuca, Bromus, Avena, Danthonia, Arundo, Andropogon, Holcus, Oryza, Zea, Tripsacum, Coix, Zizania, Hierochloa.

Properties. Feeble tonics. The herbage furnishes the best of cattle fodder; and the largest seeds are used for farinaceous diet.

CLASS SECOND. Stamens surrounding the pistil, and standing on the calyx or corol. Sometimes they are merely attached at the base.

Order XI. Palmae.

We have no plants of this order in the Northern States. The cocoanut, palm, and several other tropical plants belong to this order.

Properties. Weak tonics, and yield farinaceous diet.

Order XII. Asparagi.

Flowers with petaloid perianths, generally 6-parted or 6-cleft. Stamens adhering to the same base with the corol or calyx. Berry 3 or 4-celled, 1 to 3-seeded. Leaves often alternate, rarely whorled, never sheathing.

Generic names. Asparagus, Convallaria, Dracaena, Gyromia, Smilax, Trillium.

Properties. Mild tonics and secernant stimulants.

Order XIII. Junci.

Plants of this order generally bear flowers with small spathes, or spathe-like bracts, and free 6-parted perianths.

First division. The proper *Junci* resemble the Cyperoideae in habit; having sheathing leaves and glumaceous spathes or bracts. The flowers are in panicles or corymbs; stamens 3 or 6, and each flower has but a *single germ.*

Generic names. Juncus, Xyris, Acorus, Tradescantia, Commelina, Helonias, Xerophyllum, Veratrum, Tofieldia.*.

Second division. The *Alismaceae* are all aquatics, and each flower contains *more than one germ.*

Generic names. Alisma, Sagittaria, Triglochin, Scheuchzeria, Eriocaulon, Potamogeton, Zanichellia.

Properties. Generally secernant stimulants. The sweet-scented are warming stomachics, and the nauseous are antiscorbutics.

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* The two last are placed in a distinct order by De Lamarck and De Candolle.

Order XIV. Liliaceae.

Plants of this order have no perianths. They have 6-petalled corols of the liliaceous form. Stamens 6, standing against the divisions of the corol and often attached to it. Style 1, stigmas 3, or 3-lobed. Germs free. Capsules 3-celled, 3-valved, with transverse partitions; *seeds flat.* Leaves generally with simple nerves.

Generic names. Lilium, Tulipa, Fritillaria, Erythronium, Uvularia, Streptopus.

Properties. Emolient and weak secernant stimulants.

Order XV. Bromeliae.

We have no plants of this order, excepting rare exotics, growing in the Northern States. The pine apple (Bromelia ananas) belongs here.

Properties. Refrigerants.

Order XVI. Asphodeli.

No perianths, but some have spathes. Corols 6-parted or 6-cleft. Stamens 6, standing against the divisions of the corol and attached to it. Germs free; *seeds round* or *angled.*

Generic names. Asphodelus, Hemerocallis, Ornithogalum, Allium, Aletris, Narthecium, Hyacinthus.

Properties. Expectorants and demulcents. The strong-scented are secernant stimulants, and the bitter are tonic and cathartic.

Order XVII. Narcissi.

No perianths, but most have spathes. Corols 6-parted or 6-petalled. Stamens 6, standing against the divisions of the corol and attached to it. *Germ attached to the corol,* and generally supporting it.

Generic names. Narcissus, Amaryllis, Galanthus, Polyanthes, Agave, Hypoxis, Leptanthus, Pontederia, Heteranthera.

Properties. Weak tonics and emollients.

Order XVIII. Irides.

Corol 6-cleft or 6-parted: stamens 3: style 1, with 1 or 3 stigmas: germ attached to the corol. Leaves ensi-form or linear. Roots bulbous or tuberous.

Generic names. Iris, Ixia, Crocus, Dilatris, Sisyrinchium.

Properties. Antiscorbutics and tonics.

CLASS THIRD. Stamens standing on the pistil

Order XIX. Musae.

We have no plants of this order in the Northern States. The bread tree (Artocarpus incisa) belongs here.

Properties. Tonics.

Order XX. Cannae.

No plants of this order in our district. Ginger (Amomum) is placed here.

Properties. Warming stomachics.

Order XXI. Orchideae.

Plants of this order have superior, 5-petalled corols, 3 external and 2 internal. There is also in each corol a petal-like organ, called the lip, various in form and direction. Anthers always 1 or 2, and from 1 to 4-celled, sessile upon the side or apex of the style. The pollen is easily removed from the cells in agglutinated masses. Styles simple, with viscous stigmas of various forms and positions. Capsules 1-celled, 3-valved, 3-keeled. Seeds numerous, dust-like. Leaves entire, and generally nerved and clasping. Flowers more or less spiked and bracted.

Generic names. Orchis, Goodyera, Neottia, Listera, Pogonia, Triphora, Cymbidium, Arethusa, Tipularia, Malaxis, Microstylus, Corallorhiza, Cypripedium.

Properties. Emolients, and the roots of some are stomachic. Dioscorides, Galen and Pliny, speak of the roots as affording excellent farinaceous diet, and as of great use in discussing swellings and cleansing ulcers.

Order XXII. Hydrocharides.

Plants of this order are all aquatics. Germs simple; stigmas 3 to 6, bifid. Capsule 1 or 6 celled, many seeded. Rather an artificial order.

Generic names. Proserpinaca, Floerkea, Vallisneria.

Properties. Weak tonics.

THIRD DIVISION.

DICOTYLEDONS,

OR, PLANTS WITH 2-LOBED SEEDS.

SECTION I. *Flowers apetalous.*

CLASS FIRST. Stamens standing on the germ.

Order XXIII. Aristolochiae.

Perianth 1-leaved adhering to the germ. Stamens numerous, (6 or 12) definite, attached to the germ. Style short, stigma divided. Capsule many-celled (generally 6,) many-seeded.

Generic names. Asarum, Aristolochia.

Properties. Warming stomachics and active tonics. Galen set a high value on the tonic powers of this order of plants.

CLASS SECOND. Stamens surrounding the germ, being attached to the calyx.

Order XXIV. Aeleagni.

Calyx adheres to the germ, monophyllous, tubular, generally leafy outside and corol-like within. Stamens stand towards the top of the calyx, and are equal to the number of its division or double that number. Fruit 1-seeded.

Generic names. Thesium, Nyssa, Hippophae.

Properties. Weak tonics.

Order XXV. Thymelae.

Calyx free, 1-leaved, 4 or 5-lobed, coloured. Stamens inserted towards the upper part of the calyx, and are double the number of its divisions. Fruit 1-seeded. Stems woody; leaves simple, entire and alternate.

Generic names. Dirca, Daphne.

Properties. Mild emetics and antiscorbutics.

Order XXVI. Protae.

No plants of this order grow in our district. The silver-tree (Protea) is placed here.

Properties. Weak tonics.

Order XXVII. Lauri.

Calyx free, monophyllous, permanent, 4 to 6-cleft, or 6-parted. Stamens inserted at the bottom of the divisions of the calyx, sometimes 6 in a single row, sometimes 12 in two rows, generally varying in number; anthers adnate to the filaments, dehiscent from their base to their apexes. Germ 1, style 1, stigma simple, or divided. Drupe or berry 1-celled, 1-seeded. Stems woody, leaves alternate.

Generic name. Laurus.

Properties. Warming stomachics and active secernant stimulants.

Order XXVIII. Polygoneae.

Calyx free, monophyllous, divided, often coloured. Stamens inserted on the bottom of the calyx; anthers 2-celled and 4-grooved, laterally dehiscent into a double chink. Germ 1, styles or sessile stigmas several; seed single, farinaceous, naked, with the corcle inside.

Generic names. Polygonum, Rumex, Rheum.

Properties. Mild cathartics and demulcents. The strong-scented are antiscorbutic and discussient.

Order XXIX. Atriplices.

Calyx free, monophyllous, parted. Stamens inserted on the bottom of the calyx, and equalling the number of its divisions. Germ 1, style 1 or several. Seed often farinaceous, with corcles outside of it. Leaves alternate, simple, destitute of stipules or sheaths. Flowers small, greenish, and of a dull appearance.

Generic names. Salicornia, Blitum, Salsola, Chenopodium, Beta, Atriplex, Spinacia, Acnida, Phytolacca.

Properties. The strong scented are active cathartics. The others are mildly aperient.

CLASS THIRD. Stamens standing below the germ.

Order XXX. Amaranthi.

Calyx free, permanent, divided, often coloured. Stamens 3 or 5. Germ 1, capsule 1-celled. Seed farinaceous. Flowers small.

Generic names, Amaranthus, Gomphrena.

Properties. Secernant stimulants and weak tonics.

Order XXXI. Plantagines.

Calyx double, outer one 4-parted, inner one tubular. (Rather the outer is a proper calyx, and the inner a dull membranaceous corol.) Stamens 4, adhering to the inner calyx, exsert. Germ simple, style 1. Capsule opening transversely. 2 to 4-celled. Seed corneous. Flowers in spikes. Leaves nerved and generally radical.

Generic name. Plantago.

Properties. Emollients.

Order XXXII. Nyctagines.

Involucre perianth-like, monophyllous ; perianth monophyllous, coloured, permanent, contracted above the germ so as to appear altogether like a corol standing on the germ. Stamens attached to the gland-like base of the inner calyx, (corol?) which encloses the germ. Style 1, capitate. Seed farinaceous.

Generic name. Mirabilis.

Properties. Emetics and cathartics.

Order XXXIII. Plumbagines.

Calyx double, permanent ; outer one monophyllous, tubular ; inner one (rather the corol) coloured, 1 or many-petalled. Stamens 5, adhering to the inner calyx (corol?) Germ simple, free, styles many, or one with many stigmas. Capsule 1-seeded. Seed farinaceous.*

Generic name. Statice.

Properties. Cathartic and tonic.

SECTION II. *Flowers monopetalous.*

CLASS FOURTH. Corols inserted below the germs.

Order XXXIV. Lysimachiae.

Calyx monophyllous, permanent, 4 or 5-lobed. Corol with the limb divided, and bearing the stamens opposite, and equal in number, to the divisions. Germ free, style 1, stigma simple. Capsule 1-celled, many-seeded, seeds attached to a free columella, the corcle strait and within the fleshy seed. Leaves simple.

Generic names. Lysimachia, Anagalis, Trientalis, Primula, Dodecatheon, Samolus, Hottonia, Buchnera.

Properties. Tonics and weak secernant stimulants.

Order XXXV. Pediculares.

Calyx divided, permanent, often tubular. Corol irregular, often ringent. Stamens 2 or 4, inserted on, or attached to, the corol ; when 4, two are shorter. Germ free, style simple ; capsule 2-valved. Seed with semiterete cotyledons. Flowers bracted.

Generic names. Polygala, Veronica, Callistachia, Bartsia, Rhinanthus, Obolaria, Euphrasia, Melampyrum, Erinus, Pediculares, Oro-

* Here in the three last orders we see, that the advocates for the natural arrangement are compelled to force a corol to become a calyx. But the Linnean artificial system will guide the student to the true genus, thence to the natural order, and thus secure to him its advantages.

banche, Epiphegus. [The two last have been placed in a sub-order, and distinguished by their capsules being 1-celled, and bearing seeds on a longitudinal nerve.]

Properties. Deobstruents, cathartics and mild tonics. Ancient authors, as Dioscorides, Pliny and others, valued most plants of this order for their efficacy in healing wounds, by external application.

Order XXXVI. Acanthi.

Calyx divided, permanent, often bracted. Corol irregular. Stamens 2 or 4. Germ free, style 1, stigma 2-lobed. Capsule 2-celled. Seed with foliaceous cotyledons.

Generic names. Justicia, Ruellia.

Properties. Emolients.

Order XXXVII. Jesmineae.

Calyx tubular. Corol tubular, except in Fraxinus. Stamens 2, excepting Fraxinus, inserted in or attached to, the corol. Seed with a flat corcle. Stems woody.

Generic names. Jasminum, Ligustrum, Syringa, Chionanthes, Fraxinus.

Properties. Mild tonics and secernant stimulants. Petals of the Syringa contain prussic acid.

Order XXXVIII. Vitices.

Calyx tubular. Corol tubular. Stamens 4, two of them shorter—rarely 2 or 6. Germ free, style 1, stigma simple or 2-lobed. Corcle of the seed strait. Leaves opposite.

Generic name. Verbena.

Properties. Deobstruent and secernant stimulants. Parkinson, and the older authors, consider them as antidotes to the poison of serpents, &c.; but the moderns do not ascribe to them any very active powers.

Order XXXIX. Labiatae.

Calyx tubular, 5-cleft or 2-lipped. Corol tubular, irregular, often 2-lipped, the upper lip mostly 2-cleft, and the lower one 3-cleft. Stamens sometimes 2, mostly 4, with two of them shorter; they are always inserted under the upper lip of the corol. Germ free, 4-lobed: each lobe becoming a naked seed at the bottom of the calyx, with a strait corcle and flat cotyledons. Style 1, stigma 2-cleft. Stems generally, or perhaps always, 4-sided; leaves opposite. Flowers often whorled, and sometimes spiked.

Generic names. Lycopus, Monarda, Rosmarinus, Salvia, Collinsonia, Teucrium, Isanthus, Lavandula, Lamium, Pycnanthemum, Nepeta, Hyssopus, Mentha, Stachys, Galeopsis, Satureja, Leonurus, Marrubium, Ballota, Cunila, Hedeoma, Glechoma, Melissa, Trichostema, Ocymum, Scutellaria, Origanum, Thymus, Clinopodium, Prunella, Phryma, Mollucella.

Properties. Very active secernant stimulants, embracing all the most valuable sudorifics. The sweet-scented are warming stomachics, and the bitter ones are tonics. Ancient physicians seem to have drawn a

large proportion of their vegetable *materia medica* from this order. They establish the medicinal virtues of these plants very nearly as they are now understood. To those virtues ascribed to them by modern physicians, they added, however, that they are efficient as vermifuges, and in the cure of epilepsy, hemorrhagy, bites of serpents, and stings of scorpions.

Parkinson, who wrote almost two centuries ago, cites as authorities for the above, the trials and practice of Theophrastus, Dioscorides, Galen and Pliny among the ancients; and Matthiolus, Clusius, Camerarius, Agrippa, Dodoneus, and many others among the oldest of the moderns.

Order XL. Scrophularia.

Calyx divided, often permanent. Corol irregular, limb divided. Stamens rarely 2, mostly 4, with two of them shorter, inserted on the corol. Germ free, style 1, stigma simple or 2-lobed. Capsule 1 or 2-celled, 2-valved, valves concave. Seeds numerous, affixed to the middle of the partition, with a strait corcle and semi-cylindric cotyledons. Flowers bracted.

Generic names. Utricularia, Gratiola, Lindernia, Hemianthus, Erinus, Dracocephalum, Schwalbea, Limosella, Zapania, Scrophularia, Antirrhinum, Collinsia, Gerardia, Digitalis, Mimulus.

Properties. Deobstruents, absorbants, and mild narcotics. Ancient physicians applied them to the wounds externally. Parkinson used the Digitalis in the epilepsy two centuries ago with great success.

Order XLI. Solaneae.

Calyx 5-cleft or 5-parted, often permanent. Corol regular, 5-cleft, mostly of a lurid hue. Stamens 5, attached to the base of the corol, and alternating with its lobes. Germ free, style 1, stigma simple or sub-cleft. Fruit 2-celled, many-seeded, either a 2-valved capsule or a berry. Seeds with spiral corcles and semi-terete cotyledons. Leaves alternate.

Generic names. Lycium, Datura, Nicotiana, Verbascum, Atropa, Phacelia, Hyoscyamus, Solanum, Physalis, Capsicum.

Properties. Cathartic, discussient, emetic and antiscorbutic. The nauseous-scented are very strong narcotics; pungent scented are warming and deobstruent. Several centuries ago they were much used, externally and internally, in gouts and rheumatisms.

Order XLII. Borragineae.

Calyx 5-lobed, permanent. Corol 5-lobed, mostly regular, having a border and a tube, with the upper entrance of the tube, called the throat, naked and open, or more or less choaked up with scales. Stamens 5, attached to the tube of the corol. Germ free, with 4 lobes, which become 4 naked seeds; style simple, permanent, springing up from among the lobes of the germ; stigma entire, or 2-lobed. Seeds attached laterally to the style; corcle strait, cotyledons foliaceous. Leaves alternate, mostly scabrous.

Generic names. Pulmonaria, Cerinthe, Lithospermum, Cynoglossum, Batschia, Anchusa, Myosotis, Heliotropium, Onosmodium, Borrago, Symphitum, Echium, Hydrophyllum.

Properties. Astringent and vulnerary.

Order XLIII. Convolvuli.

Calyx 5-lobed, permanent. Corol regular, 5-lobed. Stamens 5, attached to the corol, and alternating with its divisions. Germ free, having one or many styles. Capsule generally 3-valved and 3-celled, sometimes 2 to 4-celled and 2 to 4-valved; columella central, 3-cornered. Seed bony, cotyledons folded together. Leaves alternate. Stem often twining or climbing.

Generic names. Convolvulus, Diapensia, Ipomaca, Pyxidanthera, Cuscuta.

Properties. Cathartics, mostly very mild.

Order XLIV. Polemonia.

Calyx divided. Corol regular, 5-lobed. Stamens 5, attached to the middle of the tube of the corol, alternating with the divisions. Germ free, style simple, stigmas generally 3, or 3-cleft. Capsule surrounded with the permanent calyx, 3-celled, 3-valved, many-seeded; columella central, 3-cornered. Seed with a straight corcle, and oval foliaceous cotyledons. Leaves opposite.

Generic names. Phlox, Polemonium.

Properties. Feeble tonics.

Order XLV. Bignoniaei

Calyx divided. Corol irregular, ringent and inflated. Stamens rarely 2, all others 4, with two of them shorter; an odd filament-like organ accompanies them. Capsule 2 or 4-celled, 2-valved.

Generic names. Bignonia, Catalpa, Martynia, Pentstemon, Chelone.

Properties. Mild narcotics, deobstruents and cathartics.

Order XLVI. Gentiana.

Calyx monophyllous, divided, permanent. Corol regular, often marcessent; limb equally divided into a number of parts equal to those of the calyx and of the stamens, which are mostly 5. Stamens attached to the corol. Germ free, style 1 or 2, stigmas simple or 2-lobed. Capsule 1 or 2-celled, 2-valved, many-seeded; seeds inserted on the inflexed margins of the valves. Herbage glabrous, bitter: leaves opposite.

Generic names. Gentiana, Spigelia, Swertia, Frasera, Sabbatia, Menyanthes, Villarsia.

Properties. Tonics and mild cathartics. The Spigelia is considered as a vermifuge. Dioscorides, Galen, and other ancient physicians, considered the Gentiana as a vermifuge and an antidote to poison.

Order XLVII. Apocyneae.

Calyx 5-lobed. Corol 5-lobed, regular; often furnished with 5 nectariferous appendages. Stamens 5, inserted in the bottom of the corol, or suspended from the angles of the stigma.* Germs free,

* The celebrated Robert Brown says, that in the young state the anthers of the Asclepias syriacus are not attached to the stigmas. The reader is requested to examine the anthers at all stages from the first swelling of the flower

double, style 1 or none, stigma capitate. Follicles elongated, generally in pairs, 1-celled. Seed attached to the longitudinal margins of the follicle. Herbage generally milky.

Generic names. Apocynum, Asclepias, Periploca, Vinca, Nerium, Gonolobus.

Properties. Active deobstruents, cathartics, antiscorbutics, and narcotics. Ancient physicians used the Asclepias, Apocynum, &c. as counter poisons.

Order XLVIII. Sapotae.

No plants of this order grow in our district. The southern Ironwood (Bumelia) is placed here.

Properties. Feeble antispasmodics and cathartics.

CLASS FIFTH. Corols surrounding the germ, and generally inserted on the calyx.

Order XLIX. Guaiacanae.

No plants of this order grow in this district. The lignum vitæ and benjamin tree are placed here.

Properties. Very active tonics and warming stomachics.

Order L. Rhododendra.

Calyx 4 or 5-lobed, permanent. Corol inserted in the base of the calyx, 4 or 5-parted. Stamens definite, distinct. Germ free, style 1, stigma 1. Capsule 4 or 5-celled, 4 or 5-valved. Seeds numerous, minute, corcle straight. Stems woody ; leaves alternate.

Generic names. Azalia, Itea, Menziesia, Rhodora, Rhododendron, Kalmia, Ledum, Leiophyllum, Disospyros.

Properties. Tonic. Kalmia is said to be narcotic.

Order LI. Ericae.

Calyx permanent, 4 or 5-parted, often free. Corol 4 or 5-parted or cleft, inserted on the calyx or calycine gland, often marcessent and permanent. Stamens definite, distinct, inserted on the bottom of the corol or calycine gland ; anthers often 2-horned. Germ often free ; style 1, stigma 1. Fruit many-celled, many-seeded ; berries or many-valved capsules. Seeds minute, with strait corcles and fleshy cotyledons. Stems more or less woody ; leaves often evergreen.

Generic names. Oxycoccus, Erica, Clethra, Pyrola, Chimaphila, Arbutus, Gaultheria, Epigaea, Vaccineum, Empetrum, Andromeda.

Sub order. Destitute of leaves or green herbage ; being ivory-white, yellowish-white, or reddish.

Generic names. Pterospora, Hypopithis, Monotropa.

Properties. Valuable astringents. Some bare refrigerant berries. Gerard, and other old physicians, particularly the old Germans, ap-

bud. He will find that although the anthers or masses of pollen adhere to their cases, they may be separated without lacerating the cuticle of any organ ; but that they cannot be separated from the stigma in any stage without rupturing capillary fibres or vessels. Therefore the anthers certainly grow on the stigma only. A magnifying power of at least one hundred is required for this examination.

plied plants of this order to cancerous ulcers and in hemorrhagy, two centuries ago.

Order LII. Campanulaceae.

Calyx adhering to the germ, limb divided. Corol inserted near the top of the calyx, often marcessent. Stamens inserted on the calyx below the corol, often 5, alternating with the divisions of the corol; anthers either distinct, united, or as thickened as to press against each other. Germ glandular above, style 1, stigma simple or divided. Capsule 2 to 6-celled, many-seeded, laterally dehiscent. Seeds affixed to the inner angles of the cells; corcle strait. Leaves alternate.

Generic names. Campanuly, Lobelia.

Properties. The nauseous-scented are cathartic, emetic, deobstruent and narcotic; the others are mildly aperient.

CLASS SIXTH. Corols standing on the top of the germ. Stamens with united anthers.

This class includes all plants with Compound Flowers, and correspond with the class Syngensia of Linneus. The flowers have broad receptacles, flat or convex, naked (when the florets are removed) or chaffy, supporting many florets. Egret generally supplies the place of the calyx to each floret, and is inserted on the top of the germ. The corol is tubular or ligulate, often 5-toothed. Germ simple, style 1, stigmas generally 2. Seed single, naked; corcle straight, cotyledons flat.

This class is divided into three orders.

Order LIII. Cichoraceae.

Florets all ligulate and perfect. Leaves alternate; juice in most is milky. Corols mostly yellow; rarely blue.

Generic names. Troximon, Apargia, Leontodon, Krigia, Prenanthes, Lactuca, Hieracium, Sonchus, Hyoseris, Cichorium.

Properties. Mild aperiants and weak anodynes.

Order LIV. Cinarocephalae.

Corols all tubular. Receptacles fleshy and chaffy. Stigma, above the style, articulated. Egret somewhat rigid. Leaves alternate, often spinose. Flowers capitate.

Generic names. Echynops, Cynara, Liatris, Cnicus, Carthamus, Onopordon, Carduus, Arctium, Centaurea.

Properties. Tonics; the nauseous-scented are cathartics.

Order LV. Corymbiferae.

Florets tubular and ligulate, mostly radiate. Receptacles scarcely fleshy. Stigma, above the style, not articulated. Inflorescence often a corymb.

Generic names. Scorzonera, Picris, Tolpis, Scholymus, Vernonia, Sparganophorus, Bidens, Kuhnia, Eupatorium, Mikania, Chrysocoma, Cacalia, Balsamita, Baccharis, Conyza, Gnaphalium, Artemisia, Ta-

nacetum, Chrysanthemum, Zinnia, Tagetes, Bellis, Pyrethrum, Doronicum, Inula, Erigeron, Solidago, Senecio, Tussilago, Cineraria, Aster, Heliopsis, Buphthalmum, Helenium, Boltonia, Matricaria, Anthemis, Achillea, Verbesina, Rudbeckia, Helianthus, Coreopsis, Silphium, Polymnia, Calendula, Iva, Elephantopos.

Properties. Most valuable tonics and secernant stimulants. Two or three centuries ago, the physicians considered plants of this order as the most sovereign remedies for flesh wounds. Parkinson makes a class of them, which he denominates VULNERARY or WOUND HERBS. Dioscorides and Galen deemed them very efficacious in pulmonary complaints.

CLASS SEVENTH. Corols standing above the germs. Stamens, with anthers distinct, and with filaments attached to the corol.

Order LVI. Dipsaceae.

Flowers aggregated on a common receptacle, and surrounded by a many-leaved involucre. Calyx double, outer one not adhering to the germ; the inner membranaceous or pappose calyx closely contracting around its apex. Corol inserted on the top of the inner calyx. Stamens 3 to 5, attached to the bottom of the tube of the corol, and alternating with its divisions. Seeds with a strait corcle and oblong cotyledons. Leaves opposite.

Generic names. Valeriana, Fedia, Dipsacus, Scabiosa, Cephalanthus.

Properties. Weak tonics.

Order LVII. Rubiacea.

Calyx adhering to the germ, 4 or 5-lobed. Corol regular, inserted on the germ, 4 or 5-lobed. Stamens 4 or 5, inserted on the corol. Style 1, stigmas 2. Seeds generally 2, corcle strait, cotyledons foliaceous. Leaves entire, whorled.

Generic names. Galium, Rubia, Houstonia, Mitchella.

Properties. Aperients and tonics; some abound in colouring matter.

Order LVIII. Caprifolia.

Calyx adhering to the germ, often 2-bracted at the base. Corol regular, 4 or 5-cleft, or 4 or 5-petalled with the petals broader at the base. Stamens equalling the number of divisions of the corol. Style 1 or none, stigmas 1 to 3. Berry or capsule often crowned with the permanent calyx. Stems mostly woody; leaves opposite, and sometimes connate.

Generic names. Lonicera, Xylosteum, Symphoria, Diervilla, Viburnum, Sambucus, Cornus, Hedera, Linnæa, Triosteum.

Properties. Tonics; and the strong-scented are cathartic.

SECTION III. *Flowers polypetalous.*

CLASS EIGHTH. Stamens standing on the germ, and alternating with the petals.

Order LIX. Araliae.

Calyx superior, 5-toothed, permanent. Stamens 5, styles 2 to 5. Fruit a berry. Inflorescence an umbel. Leaves compound.

Generic names. Panax, Aralia.

Properties. Valuable tonics and expectorants.

Order LX. Umbelliferae.

Calyx attached to the germ. Petals 5, inserted on the germ, or on a gland covering the top of the germ. Stamens 5, alternating with the petals. Styles 2, often permanent. Fruit bipartible, becoming 2 seeds, often ribbed or grooved on their outsides, and on their joining sides, (the commissure.) Stems herbaceous. Leaves alternate, often compound. Inflorescence an umbel, with the radiating peduncles often surrounded at their origin and sub-divisions with involucres.

Generic names. Eryngium, Hydrocotyle, Crantzia, Daucus, Ammi, Conium, Selinum, Imperatoria, Heracleum, Pastianaca, Ligusticum, Angelica, Sium, Erigenia, Cicuta, Myrrhis, Uraspermum, Chærophyllum, Smyrnium, Thaspium, Œnanthe, Carum, Apium. Anethum.

Properties. Deobstruents and narcotics; excepting the sweet-scented, which are stomachics. In the time of Dioscorides, Pliny and Galen, (during the first and second centuries) the sweet-scented plants of this order were in common use as remedies in cases of dyspepsia, flatulency, cholic and epilepsy; and the narcotic kinds* were used as antidotes to poison, and as remedies in liver complaints, gouts and rheumatisms, and by way of external application in the resolution of inflamed tumors.

CLASS NINTH. Stamens inserted below the germ.

Order LXI. Ranunculaceae.

Calyx many-leaved, or none. Petals many, often indefinite. Stamens often indefinite in number. Germs often numerous, rarely solitary, inserted on the receptacle, each having a single style. Seed with a minute corcle at the apex or base of a corneous albumen.

Generic names. Zanthorrhiza, Actæa, Macrotys, Podophyllum, Delphinium, Aconitum, Aquilegia, Nigella, Hydrastis, Clematis, Atragene, Thalictrum, Caulophyllum, Helleborus, Anemone, Hepatica, Nelumbium, Ranunculus, Trollius, Adonis, Hydropeltis, Caltha, Pæonia, Coptis.

Properties. Deobstruent, cathartic, caustic and narcotic. The two last genera have astringent roots.

Order LXII. Papaveraceae.

Calyx free, often 2-leaved and caducous; sometimes about 5-leaved. Stamens many. Germ single; style often wanting; stigma divided or lobed, permanent. Fruit a capsule or pod, 1-celled, many-seeded; seeds attached to lateral columellas; albumen fleshy; corcle strait.

Generic names. Chelidonium, Papaver, Sanguinaria, Argemone, Nymphæa, Nuphar, Sarracenia? Fumaria, Corydalis.

Properties. Deobstruent, cathartic, caustic, antiscorbutic, narcotic, and

* The root of the cicuta maculata is a most deadly poison early in the spring. On the 10th of April, 1820, Asa H. Manley and Amos Ramsdell, of Rutland, Vermont, ate a small quantity of the root of this plant. The former died in two hours, the latter in 36. They were both under ten years of age. I examined the plant in the ensuing summer, and took specimens which grew from the remainder of the same root; and was particular in questioning the parents and neighbours respecting the above facts at the same time.

anodyne. The papaver was in use as an anodyne in the time of Theophrastus, between three and four hundred years before the Christian era. Dioscorides used the fumaria and chelidonium as antiscorbutics.

Order LXIII. Crucifera.

Calyx 4-leaved. Petals 4, disposed in the form of a cross and alternating with the leaves of the calyx. Stamens 6, two of them outer and shorter. Germ single, sitting on the disk-like receptacles which support the stamens; style 1 or none, stigmas 1 or 2. Fruit a silique or silicle. Seeds with incurved corcles. Stems herbaceous; leaves alternate.

Generic names. Cakile, Draba, Alyssum, Lepidium, Thlaspi, Lunaria, Cochlearia, Iberis, Isatis, Dentaria, Cardamine, Barbarea, Sisymbrium, Erysimum, Cheiranthus, Hesperis, Arabis, Turritis, Raphanus, Brassica, Sinapis.

Properties. Aperient, diuretic, antiscorbutic, nutrientic, and emolient. Plants of this order have been used as emolients and diuretics, and as remedies in the jaundice, for several centuries.

Order LXIV. Capparides.

Calyx polyphyllous, or monophyllous and parted. Petals 4 or 5. Stamens often indefinite. Germ stiped, style short or none, stigma simple. Pod or berry many-seeded. Corcle of the seed incurved.

Generic names. Reseda, Parnassia, Cleome.

Properties. Feeble aperients; excepting the Cleome, which is an active cathartic and emetic, and considerably narcotic.

Order LXV. Sapindi.

We have no plants of this order in our district. The soap-berry of the Southern States is placed here.

Properties. Emolient.

Order LXVI. Acera.

Calyx monophyllous, permanent, 5-cleft. Petals 5 (or none) with claws, inserted on a disk below the germ, and alternating with the lobes of the calyx. Stamens distinct and inserted on the disk with the corol. Germ free. Stigmas 1 or 2. Capsules 2 or 3-celled, 1-seeded. Stems woody; leaves opposite.

Generic names. Acer, Aesculus.

Properties. Aperient.

Order LXVII. Malpighiae.

We have no plants of this order in our district.

Properties. Aperient.

Order LXVIII. Hyperica.

Calyx monophyllous, 4 or 5-parted. Petals 4 or 5. Stamens numerous, sometimes united by their filaments in several parcels. Germ single, free; styles 3 to 5. Capsule 1 to 5-celled, 3 to 5-valved, with inflexed margins, many-seeded. Seed without albumen, corcle strait. Leaves opposite, often glandular; flowers yellow or yellowish.

Generic names. Hypericum, Ascyrum, Dionaea, Drosera.*
Properties. Tonic and vulnerary.

Order LXIX. Guttiferae.

We have no plants of this order in our district.
Properties. Expectorants and secernant stimulants

Order LXX. Aurantia.

Calyx monophyllous. Petals 4 or 5; stamens often united by their filaments in several parcels. Berry many-seeded. Corcle strait. Stems woody; leaves glandular.
Generic name. Citrus.
Properties. Tonics and refrigerants.

Order LXXI. Melia.

Calyx monophyllous. Petals 4 to 9, often adhering at the base. Stamens sometimes adhering by their filaments, equal in number to the petals or double. Germ single, free; style 1. Berry or capsule many-celled. Seed without albumen, corcle strait. Stems woody: leaves alternate.
Generic names. Melia, Thea.
Properties. Astringent and feebly narcotic.

Order LXXII. Vites.

Calyx monophyllous, short, subentire. Petals 4 to 6, broader at the base. Stamens equal in number, and opposite to the petals, and inserted on a disk beneath the germ. Germ single, free; style 1 or none. Berry 1 or many-celled, 1 or many-seeded. Seed bony and destitute of albumen, corcle straight, cotyledons flat. Stems woody and climbing; leaves alternate; tendrils opposite to the leaves.
Generic names. Vitis, Ampleopsis.
Properties. Tonics and refrigerants.

Order LXXIII. Gerania.

Calyx permanent, 5-parted or 5-leaved. Petals 5, with claws, generally unequal or irregular. Stamens 5 to 10; filaments often unequal, sometimes united at the base. Germ single, free, often 5-angled, sometimes surrounded by a gland; style 1, stigmas often 5. Seed without albumen, corcle incurved. Stems herbaceous; leaves often stipuled.
Generic names. Geranium, Palargonium, Erodium. *Geranioids.* Oxalis, Impatiens, Tropoeolum.
Properties. Tonics, refrigerants, and feeble narcotics.
The geranioids ought to be disposed of differently.

Order LXXIV. Malvaceae.

Calyx often double with the inner one monophyllous. Petals 5, regular, generally adhering to the base of the filaments. Stamens innumerable, united by their filaments. Germ free, simple, often lobed, stigmas many. Fruit many-capsuled or many-celled. Seed without

* See Nuttall, page 279.

albumen ; corcle lobed, incurved and wrinkled. Leaves alternate, simple, stipuled.

Generic names. Gordonia, Napaea, Sida, Hibiscus, Malva, Althaea, Lavatera, Gossipium.

Properties. Emolient and aperient. Plants of this order were used as aperients and for sheathing the stomach when any acrid substance had been taken into it, by Dioscorides and other ancient physicians; and Hippocrates valued them highly for their vulnerary qualities.

Order LXXV. Magnoliae.

Calyx 3-leaved. Petals 6 or 9. Stamens many, not united. Germs many, arranged on an elongated receptacle in the form of a cone. Capsules many, 1 or 2-seeded. Seed with fleshy albumen and strait corcle. Stems woody ; leaves alternate, having caducous stipules.

Generic names. Magnolia, Liriodendron.

Properties. Tonics.

Order LXXVI. Annonae.

Calyx 3-leaved. Petals 6. Stamens many. Germs 2 or more. Berries or capsules 2 or more, 1-seeded. Seed compressed, corcle minute, albumen solid. Stems shrubby ; leaves alternate and destitute of stipules.

Generic name. Porcelia.

Properties. Tonics.

Order LXXVII. Menisperma.

Calyx 4 or 6-leaved. Corol none or more than 5-petalled. Flowers dioecious—stamens adnate—germs and styles 3 to 6. Drupes or berries 1-seeded. Seed with fleshy albumen, corcle at the summit. Stems woody, mostly twining or climbing. Leaves alternate, simple, destitute of stipules.

Generic name. Menispermum.

Properties. Weak narcotics.

Order LXXVIII. Berberides.

Calyx polyphyllous or deeply parted. Petals equalling the divisions of the calyx in number. Stamens equalling the petals in number and opposite to them. Germ simple, free ; style 1 or none. Fruit 1-celled, often many-seeded. Seed affixed to the bottom of the cell ; albumen fleshy, corcle strait. Stems woody ; leaves alternate. Flowers yellow.

Generic names. Berberis, Hamamelia.

Properties. Astringents and refrigerants.

Order LXXIX. Tiliaceae.

Calyx polyphyllous or many parted. Petals alternating with the divisions of the calyx. Stamens innumerable. Germ simple, free. Berry or capsule 1 or many-celled, 1 or many-seeded. Seed with fleshy albumen ; corcle subincurved, flat. Stems woody ; leaves alternate, simple, stipuled.

Generic name. Tilia.

Properties. Emolient and aperient.

Order LXXX. Cisti.

Calyx 5-parted. Petals 5. Stamens 5 or more. Germ single, free; style 1. Capsule with many seeds attached to the middle of the valves or base of the cells. Albumen fleshy or corneous. Leaves stipuled.

First division. Petals equal. Stamens more than 5. Seed with a curved or spiral corcle.

Generic names. Cistus, Hudsonia.*

Second division. Petals unequal. Stamens 5. Seed with a strait corcle.

Generic name. Viola.

Order LXXXI. Rutaceae.

Calyx monophyllous, 5-lobed. Petals 5, alternating with the lobes of the calyx. Stamens 10 or 15. Germ simple, free; style 1. Fruit many-capsuled or many-celled. Seed with flat cotyledons and strait corcle.

Generic name. Ruta.

Properties. Caustic and cathartic.

Order LXXXII. Caryophylleae.

Calyx often permanent, 4 or 5-toothed, or 4 or 5-leaved. Petals 4 or 5 (sometimes wanting) with claws, alternating with the divisions of the calyx. Stamens often double the number of the petals; sometimes equal and alternating with them. Germs simple, sometimes sub-stiped; styles 3 to 5. Capsule many-valved, dehiscent at the top. Seeds affixed to the centre of the base of the capsule; albumen farinaceous; corcle involute. Stems with joints; leaves opposite entire.

Generic names. Dianthus, Saponaria, Lychnis, Agrostemma, Silene, Cucubalus, Cerastium, Arenaria, Spergula, Linum, Sarothra, Sagina, Lechea, Mollugo, Queria, Stellaria.

Properties. Emolient and aperient. This order comprises those plants which are called pinks, chickweeds and flax. Flax-seed has been used as an emolient and aperient more than two thousand years.

CLASS TENTH. Stamens surrounding the germ, and attached to a monophyllous calyx.

Order LXXXIII. Sempervivae.

Calyx free, parted. Corol inserted at the base of the calyx; petals (or the deep divisions) equalling in number the divisions of the calyx. Stamens equal or double the number of petals. Germs equalling the number of petals, or having an equal number of lobes. Capsules (or follicles) 1-celled, opening on one side longitudinally, many-seeded. Seed with a slender, fleshy albumen, and strait corcle. Stems herbaceous; leaves mostly fleshy; inflorescence a cyme.

Generic names. Sedum, Sempervivum, Penthoram, Tillaea.

Properties. Emolient and vulnerary.

Order LXXXIV. Saxifragae.

Calyx adhering, rarely free, limbs 5-lobed. Petals 4 or 5, (sometimes wanting) inserted at the top of the calyx, and alternating with its

* See Nuttall, vol. 2. p. 4.

division. Stamens inserted with the petals, and are equal or double in number. Style 2, permanent. Capsule 2-beaked, 2-valved, 1 or 2-celled, dehiscent by a terminal pore. Seeds inserted on the base of the capsule or the inflexed edges of the valves; albumen fleshy, corcle strait.

Generic names. Heuchera, Hedyotis, Saxifraga, Tiarella, Mitella, Chrysosplenium, Hydrangea? Hortensia?

Properties. Tonics.

Order LXXXV. Cacti.

Calyx adhering to the germ, 5-cleft. Petals inserted on the calyx. Style 1, stigma cleft. Berry 1-celled, many-seeded.

First division. Petals indefinite. Stamens indefinite. Style tubulose, stigma many-cleft. Berry umbilicate. Seed without albumen, corols incurved.

Generic name. Cactus.

Second division. Petals 5. Stamens 5. Style 2-cleft. Berry globose. Seed with corneous albumen, corcle strait.

Generic name. Ribes.

Properties. Refrigerants and emolients.

Order LXXXVI. Portulaceae.

Calyx divided at the top. Corol inserted on the calyx, 1 or 5-petalled (rarely wanting.) Stamens inserted on the corol. Germ free or adhering at the base; style 1 to 3, or none. Capsule 1 or many-celled, 1 or many-seeded. Seed with an incurved or ring-like corcle, surrounding a farinaceous albumen.

Generic names. Portulacca, Claytonia, Scleranthus, Crypta.

Properties. Emolient.

Order LXXXVII. Ficoideae.

Calyx parted, free or adhering to the germ. Petals inserted on the top of the calyx, sometimes adhering a little at the base. Stamens indefinite in number, inserted with the petals. Styles many. Capsule or drupe many-celled. Seed affixed to the inner angles of the cells. Corcle incurved, and surrounding a farinaceous albumen. Leaves succulent.

Generic name. Mesembryanthemum.

Properties. Refrigerant and emolient.

Order LXXXVIII. Onagrae.

Calyx adhering to the germ, tubular, divided at the top. Petals generally 4, (rarely none) inserted on the top of the calyx. Stamens inserted with the petals, equalling or double their number. Germs many; style 1. Fruit many-celled, many-seeded; seeds affixed to the top of the cells; albumen wanting, corcle strait, rostel superior and longer than the cotyledons.

Generic names. Circaea, Ludwigia, Isnardia, Gaura, Epilobium, Oenothera, Myriophyllum, Serpicula. *Onagraoids, with single germs.* Callitriche, Hippuris.

Properties. Tonics and aperients.

Order LXXXIX. Myrti.

Calyx adhering to the germ, permanent, divided. Petals generally 5, inserted on the top of the calyx. Stamens 20 or more, inserted on the calyx under the petals. Style 1. Fruit many-seeded, 1 or many-celled. Seed without albumen, corcle strait or curved; cotyledons flat. Stems woody; leaves generally opposite, and often with pellucid punctures.

Generic names. Philadelphus, Myrtus.

Properties. Tonics.

Order XC. Melastomae.

Calyx tubular, 4 or 5-cleft. Petals equal in number to the divisions of the calyx, and alternating with them, inserted on the top of it. Stamens double the number of petals. Germ enclosed by the calyx. Seed without albumen, corcle incurved. Stems herbaceous; leaves opposite, simple, nerved.

Generic name. Rhexia.

Properties. Feebly tonics.

Order XCI. Salicariae.

Calyx free, tubular, permanent. Petals inserted at the top of the calyx, sometimes wanting. Stamens inserted in the middle of the calyx, equalling, or double, the number of divisions. Germ single, style 1. Capsule covered by the calyx, 1 or many-celled. Seeds numerous, affixed to a central columella; without albumen, corcle strait, rostel inferior. Leaves mostly opposite.

Generic names. Lythrum, Glaux, Ceratophyllum, Ammannia, Cuphea.

Properties. Deobstruent and cathartic.

Order XCII. Rosaceae.

Calyx mostly permanent, divided, covering the germ, either adhering or free. Petals inserted on the top of the calyx, generally 5, alternating with the divisions of the calyx. Stamens indefinite in number. Germs single or many. Fruit various. Seed with a lateral hilum under the apex, to which the funicle is attached springing from the bottom of the pericarp; albumen none, corcle strait. Stems woody or herbaceous; leaves alternate.

§ *First division. Pomaceae.* Calyx 5-celled. Petals 5. Germ single, adhering to the calyx. Styles many. Pome umbilicate, crowned with the lobes of the calyx, many-celled. Seed with the rostel inferior. Stems woody. Flowers complete and perfect. Stamens about 20.

Generic names. Pyrus, Aronia, Punica, Crataegus, Mespilus, Sorbus.

Second division. Rosae. Germs many, 1-seeded, concealed within the calyx, which is contracted at the neck; style 1 to each germ. Rostel of the seed superior. Stem woody. Flowers complete and perfect. Stamens about 20. Leaves pinnate, with stipules adhering to the petioles.

Generic name. Rosa.

Third division. Agrimoniae. Germs generally 2, each with 1-style, and 1-seeded, concealed within the urceolate calyx. Rostel of the seed

superior. Stems herbaceous or woody. Flowers sometimes apetalous and monoecious. Leaves pinnate or digitate.

Generic names. Poterium, Sanguisorba, Agrimonia.

Fourth division. Dryadeae. Germs many; each 1-seeded, free, inserted on a general receptacle, style 1 to each. Rostel of the seed superior. Stems herbaceous, or suffruticose. Stamens about 20.

Generic names. Potentilla, Fragaria, Dalibarda, Comarum, Geum, Rubus, Calycanthus.

Fifth division. Ulmariae. Germs many, free, each having 1 style. Capsule equal in number to the germs, 1 or many-seeded. Rostel of the seed superior. Flowers mostly complete and perfect. Stamens indefinite in number.

Generic names. Spiræa, Gillenia.

Sixth division. Drupaceae. Germ single, free, style one. Drupe with a 1 or 2-seeded nucleus; internal membrane of the seed somewhat fleshy and tumid. Rostel superior. Stems woody. Flowers complete and perfect. Stamens indefinite in number. Leaves simple, having glandular bases or petioles. Calyx 5-lobed; petals 5.

Generic names. Prunus, Armeniaca, Amygdalus.

Properties. Refrigerants, tonics and astringents.

Order XCIII. Leguminosae.

Calyx often 5-cleft or 5-parted. Corol 5-petalled, inserted on the calyx, consisting of a banner, two wings and a keel. Stamens generally 10, mostly united in two sets, 9 and 1; sometimes in one set, and sometimes they are free. Germ free, style 1. Legume generally 2-valved, 1-celled; sometimes transversely divided into several cells. Seeds affixed to the suture of one side; without albumen; cotyledons thick. Stem woody or herbaceous; leaves alternate, often compound; stipules axillary—leafets often close up at evening.

First division. Stamens all distinct.

Generic names. Cassia, Cercis, Baptisia.

Second division. Stamens united by their filaments in one set.

Generic names. Ulex, Mimosa, Genista, Crotolaria, Arachis, Amorpha, Lupinus, Spartium.

Third division. Stamens united, 9 in one set, and one separate. Legume 1-celled. Cotyledons always rise up out of the earth when the plant commences its growth, and become succulent leaves. Leaves ternate or pinnate, with a terminal leafet.

Generic names. Trifolium, Melilotus, Medicago, Trigonella, Phaseolus, Glycine, Galactia, Vexillaria, Glycyrrhiza, Galega, Indigofera, Robinea, Colutea.

Fourth division. Stamens united, 9 in one set, and 1 separate. Legume partly divided by an imperfect longitudinal partition.

Generic names. Astragalus, Dolichos?

Fifth division. Stamens united, 9 in one set, and one separate. Legumes 1-celled. Cotyledons do not rise out of the ground, nor become leaves. Leaves pinnate, without a terminal leafet; but the general petiole terminates in a tendril or filament.

Generic names. Lathyrus, Pisum, Vicia, Ervum.

Sixth division. Stamens united, 9 in one set, and one separate. Legume transversely divided into many cells, each cell 1-seeded, not dehiscent spontaneously.

Generic names. Coronilla, Gleditschia, Hedysarum, Lespedeza, Stylosanthes, Æschynomene.

Properties. Emolient diuretic and aperient. In the time of Dioscorides and Galen, the same properties were ascribed to this order of plants as at this day.

Order XCIV. Terebintaceae.

Calyx often free, parted. Petals inserted on the base of the calyx, and alternating with its divisions, (often wanting.) Stamens inserted with the petals, equal or double in number. Fruit various. Seed without albumen, rostel reflexed into lobes. Stems woody; leaves alternate. [This order is not satisfactorily defined.]

Generic names. Rhus, Juglans, Carya, Zanthoxylum.

Properties. Cathartic, emetic and narcotic.

Order XCV. Rhamni.

Calyx divided. Corol many-petalled, (sometimes none, and sometimes deeply divided,) inserted on the calyx, and equalling the divisions of the calyx in number. Stamens of the same number. Germs single, free, surrounded by the calyx. Fruit a berry or capsule, many-celled. Seed with fleshy albumen, corcle straight, rostel inferior. Stems woody; leaves stipuled.

Generic names. Staphylea, Euonymus, Ilex, Ceanothus, Rhamnus, Prinos.

Properties. Cathartic, and somewhat tonic.

Section IV. *Diclinious or anomalous.*

CLASS ELEVENTH. Flowers generally without petals; stamens and pistils mostly in different flowers. [An imperfect definition; for many plants of this class have petals, and are not diclinious. It is a kind of residue class.]

Order XCVI. Euphorbeae.

Flowers solitary, spiked, or encircled by involucres. Perianth (or corol) many-parted; sometimes wanting in the pistillate. Stamens inserted on the receptacle, filaments often articulated in the middle. Germ free, often stiped; styles 1 to 3, 2-cleft. Capsule 2 or 3-seeded; valves elastically dehiscent. Seeds arilled, affixed at the top of a central columella; corcle flat, involved in a fleshy albumen; rostel superior.

Generic names. Ricinus, Euphorbia, Phyllanthus, Acalypha, Buxus.

Properties. Cathartics and mild emetics. The seeds of the Ricinus communis had been long in use as a cathartic, before the time of Dioscorides in the first century.

Order XCVII. Cucurbitaceae.

Calyx adhering to the germ, contracted above, and then dilated into a 5-cleft limb. Corol bell-form, inserted on the top of the germ, 5-lobed, at length withering and permanent. Stamens 3 to 5, inserted on the contracted part of the calyx, often united; anthers 1-celled, oblong, attached to the top of the filament; the staminate flowers have abortive germs. Germ single. Fruit a berry, with a solid bark, which

is often corneous. Seeds many, without albumen; corcle strait; cotyledons flat. Stems herbaceous, mostly climbing; leaves petioled, alternate, broad; tendrils are often inserted in the axils of the leaves.

Generic names. Passiflora, Momordica, Sycios, Cucurbita, Cucumis, Melothria.

Properties. The fruit is mostly refrigerant; the herbage and nauseous fruit are emetic and cathartic.

Order XCVIII. Urticæ.

Flowers small, greenish, solitary, in aments, or surrounded by involucres. Calyx (or corol) 1-leaved, lobed. Stamens inserted on the base of the calyx. Germ single, free; styles 1 or 2-cleft. Leaves mostly hispid.

First division. Artocarpae. Flowers aggregated, sitting on a general receptacle. Fruit fleshy. Seed having fleshy albumen and curved corcle.

Generic names. Ficus, Morus.

Second division. Urticeae. Flowers solitary, on aments or spikes. Fruit never fleshy. Seed without albumen; corcle often strait.

Generic names. Urtica, Bœhmeria, Parietaria, Cannabis, Humulus, Ambrosia, Xanthium.*

Properties. Tonics.

Order XCIX. Amentaceae.

Staminate flowers in aments, furnished with scales on which the stamens are inserted. Pistillate flowers have scales or perianths; germs free; stigmas many. Fruit bony or membranaceous. Seed without albumen; corcle strait, flat. Stems woody; leaves alternate and caducous. [This description is defective in its application to Celtis and Ulmus.]

First division. Flowers diœcious.

Generic names. Salix, Populus, Myrica.

Second division. Flowers monœcious.

Generic names. Betula, Alnus, Carpinus, Ostrya, Fagus, Castanea, Corylus, Quercus, Platanus, Liquedambar, Comptonia.

Third division. Flowers perfect.

Generic names. Fothergillia, Celtis, Ulmus.

Properties. Tonics and astringents.

Order C. Coniferae.

Staminate flowers in aments, each furnished with a scale or perianth supporting the stamens. Pistillate flowers in strobiles, each furnished with a hard scale. Fruit bony or membranaceous. Seed with a cylindric corcle in the centre of fleshy albumen. Stems woody; leaves evergreen; juice resinous.

Generic names. Pinus, Cupressus, Thuja.

Sub-order, Juniperi. Fruit a berry or drupe.

Generic names. Juniperus, Taxus.

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* Some botanists place the two last genera in the order corymbiferæ, also in the Linnean class syngenesia. I see no good reason for these innovations. See De Lamarck and De Candolle, p. 183.

Properties. Secernant stimulants and expectorants. The resinous juice obtained from these plants has been applied as a remedy to wounds and old ulcers for more than two thousand years. Various preparations, as tar-water, decoction of the bark, &c. have been used with various success from the time of Dioscorides, and probably much earlier, in pulmonary complaints.

General Rules for avoiding Poisons.

Plants not Poisonous.

1. Plants with a *glume* calyx, never poisonous. As Wheat, Indian corn, Foxtail grass, Sedge grass, Oats. *Linneus.*
2. Plants whose stamens *stand on the calyx*, never poisonous. As Currant, Apple, Peach, Strawberry, Thorn. *Smith*, p. 392.
3. Plants with *cruciform* flowers, rarely if ever poisonous. As Mustard, Cabbage, Water-cress, Turnip. *Smith*, p. 487.
4. Plants with *papilionaceous* flowers, rarely if ever poisonous. As Pea, Bean, Locust tree, Wild indigo, Clover. *Smith*, p. 446.
5. Plants with *labiate* corols, bearing seeds without pericarps, never poisonous. As Catmint, Hyssop, Mint, Mother-wort, Majoram. *Smith*, p. 434.
6. Plants with *compound* flowers, rarely poisonous. As Sunflower, Dandelion, Lettuce, Burdock. *Milne.*

Poisonous Plants.

1. Plants with 5 stamens and one pistil, with a dull-coloured *lurid* corol, and of a nauseous sickly smell, always poisonous. As Tobacco, Thorn-apple, Henbane, Nightshade. The degree of poison is diminished where the flower is brighter coloured and the smell is less nauseous. As potatoe is less poisonous, though of the same genus with nightshade. *Smith*, p. 415.
2. *Umbelliferous plants* of the aquatic kind, and of a nauseous scent, are always poisonous. As Water-hemlock, Cow-parsley. But if the smell be pleasant, and they grow in dry land, they are not poisonous. As Fennel, Dill, Coriander, Sweet-cicily. *Smith*, p. 416.
3. Plants with *labiate* corols and seed in capsules, frequently poisonous. As Snapdragon, Foxglove. *Smith.*
4. Plants from which issues a *milky juice* on being broken, are poisonous, unless they bear compound flowers. As Milkweed, Dogbane, Milne's Contortæ and Lactescentia.
5. Plants having any *appendage* to the calyx or corol, and twelve or more stamens, generally poisonous. As Columbine, Crowfoot. *Linneus.*

Most general Rule.

Plants with few stamens, not frequently poisonous, except the number be five; but if the number be twelve or more, and the smell nauseous, heavy and sickly, the plants are generally poisonous. Milne's Multisiliquæ and Sapor.

Note. Many plants possess some degree of the narcotic principle, which are still by no means hurtful.

VEGETABLE PHYSIOLOGY.

This Grammar was prepared for aiding students in the study of Analytical Botany. But the Physiology of Vegetation should occupy a small proportion of the time devoted to Analytical, or Systematical Botany; to prepare him for understanding some principles which lie directly in his way.

Vegetable Physiology, Phytology, and the Philosophy of Vegetation, mean nearly the same thing. It is the science which treats of: 1. The germination and growth of a plant from the seed. 2. The propagation of a plant. 3. The increase of the growth of a perennial plant. 4. The external and internal structure and constituent organs of a plant, with their uses in its economy. 5. The properties of a plant in relation to other bodies.

1. The Germination and Growth of Plants from the Seed.

If a seed be immersed in warm water for a considerable time, and then subjected to a high magnifying power, the elementary form of the future plant may be seen. In some seeds even the embryo of the future flower becomes manifest. Therefore it may not be absurd to say, that the germination and growth is effected by the developement of the embryo plant contained in the seed; and that this developement goes on by means of successive supplies of nutriment, which are taken into an organized structure adapted to their reception.

But where shall we stop in our views of these elementary forms? Shall we say, that within the embryo of the future flower which sometimes become manifest under the microscope, there is probably another seed containing the elementary form of the next generation, and so on *ad infinitum?*

Fortunately the present state of the science presents the means of fixing the limit in the most satisfactory manner. For nothing in the physiology of organized beings is better established, than that a perfect future seed cannot be produced without the application of pollen from a stamen to the pistil of a stigma. But if the future seed were perfect in the present one, such an operation would not be necessary. Therefore by the aid of the microscope and this established law, we are enabled to infer, that a seed may contain the elements of a future plant as far as the flower and empty tegument of the future seed, and no farther.

2. The propagation of Plants.

There are two methods of propagating plants. First, by *reproduction;* second, by *continuation.*

1. A plant is *reproduced,* when it grows immediately from the seed. The potatoe is reproduced, when the seed is taken from the berry, planted and grows. Apple trees are reproduced in the nurseries from seeds, &c.

2. A plant is *continued,* when parts taken from its roots, stem, branches, buds, &c. are transferred to different places, and so cultivated as to continue to grow in several places at the same time. The

living branches or twigs of the same apple tree may continue to grow from the original root, and from hundreds of other roots in different countries at the same time. And it is a fact now well established, that those twigs or grafts, however recently inserted, feel the effects of age in the same degree with the twigs remaining on the original tree ;* all other circumstances being similar.

The roots of potatoes continue in succession in their native torrid regions year after year for a limited period, like the Malaxis and some others of the Orchis family in our latitude. Agriculturalists and gardeners aid their progress here, by housing the roots in winter, and setting them in the earth again in the spring season. These too are greatly distributed ; so that this plant is vastly extended by the continuation of the same individual. But in due time the effects of age become manifest to the cultivator, and he finds it necessary to reproduce this useful plant from the seed.

The Lombardy poplar is becoming enfeebled with age in our country, so that very recent shoots will hardly withstand a severe winter. The reason is manifest. There has never been a pistillate tree introduced from Europe ; consequently this tree has never been reproduced here from the seed. We therefore see but the feeble limbs of an exile in dotage, though yet sustained in a thousand localities.

3. The Increase of Plants, or the enlargement of their volume.

After the first season of growing, all woody plants continue to increase their size, if no accident occurs, until age terminates their vital energies. Their volume is not enlarged from an extension of each fibre or pore ; but from the annual acquisition of new ones. These new ones are always deposited between the bark and wood.

In the spring season a mucilage is formed between the bark and wood, called the camb, or *cambium*. Towards the decline of the year it becomes considerably indurated, and separates itself into two concentric hollow cylinders, of very different thicknesses. The thinner one is attached to the bark, and forms its inner membrane. The thick one is attached to the wood, and becomes the outer layer of the wood for the next year.

It is on this account that those trees which long retain their expanding cuticles, present to our land surveyors those paradoxical magic-like marks. A beech tree, for example, if lettered or figured with a board-marker, will present these marks twenty or thirty years afterwards, both on the cuticle and on the wood, of the year when marked ; while the intervening layers, are sound and without a scar. These interposed woody layers, originating in mucilage annually deposited between the bark and wood, gradually separate the marked bark and cuticle from the marked wood, while they grow between these marks and become continuous.

4. The external and internal Structure, and constituent Organs of Plants, with their uses in its economy.

Plants are bounded externally, in all their parts, with curved lines. They are defended by an almost insensible and imperishable membrane

* See Smith's Elements of Botany.

called the cuticle. This and the other concentric cylinders have been described at p. 7. The parenchymous parts of the foliage, consisting wholly of the cellular integument covered with the transparent cuticle, is well adapted to the purpose of subjecting the sap to the requisite influence of the atmosphere. This office is, to the plant, very analagous to that of the lungs to animals—particularly the gills of fish.

The internal structure of a plant is adapted to the reception and circulation of the fluids. The tubes and cells are different in different plants. Large in aquatics, small in evergreens.

The organs and parts of a plant are adapted to its situation, soil, and nature. The lichen is furnished with organs adapted to its slow growth and dry leathery texture. The pompkin to its rapid and gigantic growth, succulent herbage, and open texture. The same species will often vary some of its characteristics to accommodate itself to a forced situation. As some trees bear large and almost intire leaves, while in a defended situation, enclosed by other trees. But when left exposed to winds and storms, by having their defenders cut away, their leaves will be diminished in size, encrease in number, and present a deeply divided form.

When trees, which have wide-spreading tops, grow upon a steep side-hill, they accommodate the direction of their lower spreading limbs to the ascent of the hill.

I might add those organs with which a plant is furnished for propagating its seed. Such as the egret of the dandelion and thistle; and the hooks of the hated burdock, which compel shaggy coated animals to transport the seed; and thus become the unwilling instruments for propagating a plant, which is never sought but as a loathsome drug.

5. The Properties of a Plant in relation to other bodies.

Animals feed on plants and find them essential to their well-being. But there are many plants, which affect the animal system very powerfully. These plants are studied, with a view to check any morbid action in the animal system, which may be effected by the uses of plants which are found to counteract such morbid action. A classification of plants for this purpose has been described in the Natural Orders of Jussieu.

Vegetables are studied for the purpose of learning their properties in relation to unorganized matter also. A profitable application of this kind of knowledge is made in dying, calico-printing, reducing ores by the aid of charcoal, &c.

The student will find much information on these subjects in Smith's Elements of Botany, Willdenow's Elements, Darwin's Phytology, Sumner's Botany, &c.

BOTANICAL DICTIONARY.

As the language of Botany is now extended to every department of Natural Science, I have added the common terms which are peculiar to Mineralogy and Zoology, for the purpose of furnishing Schools with a general Dictionary of Natural History.

NOTICES.—Words, which are defined in the Grammar, will be referred to the pages in the Grammar, in order to avoid repetition.

Latin words are printed in *Italics*. When a word is the same in Latin and English, excepting a terminal letter or two, it is generally omitted in one of the languages.

A.

ABBRE'VIATED pe'rianth. Shorter than most perianths in proportion to its breadth.

ABBREVIA'TION. Altho' any botanist may employ such abbreviations as best suit his purpose, by explaining their import; yet the following are in such general use, that it is convenient to know them:

Rad. root.
Fol. leaf.
Stip. stipule.
Flo. flower.
Cal. calyx.
Cor. corol.
Pet. petal.
Stam. stamen.
Fil. filament.
Anth. anther.
Pist. pistil.
Stig. stigma.
Fr. fruit.
Ph. leafet of calyx, or leaf.
Per. pericarp.
Mas. staminate flower.
Fem. pistillate flower.
Neu. neutral flower.
Her. perfect flower.
☉ annual.
♂ biennial.
♃ perennial.
♄ woody.

Abbrevia'tus. See abbreviated.

ABDOMI'NAL. Belonging to, or situated on, the abdomen; as fins, rings, &c.

Abor'tiens. See abortive.

ABOR'TIVE flower. Not arriving to perfection; the proof of which is the want of perfect seed.

—— *seed.* Not increasing, or not becoming perfect for want of the reception of pollen by way of the stigma.

—— *pistil.* Defective in some essential part.

—— *stamens.* Not furnished with anthers; or with those which have no opening cells, or which are mere sketches or rudiments of anthers.

ABRUPT' leaf. A pinnate leaf, which has not an odd, or terminal leafet.

—— *root.* Appearing as if bitten off; as bird-foot violet.

Abrupte. Abruptly.

Acalyc'inus. Without a calyx.

Acau'lis. Stemless.

AC'CESSORY. Additional. Annexed and of a different kind, often applied to the border of the receptacle of a lichen.

ACERO'SE leaf. Needle-form. Generally inserted on the sides of branches, as in the pines.

Acero'sus. Acerose.

Acicula'ris. Form of a small needle.

ACINAC'IFORM leaf. Sabre-form. One edge sharp and convex, the other thicker and strait or concave. Cutlass-form.

Acinacifor'mis. Acinaciform.

AC'INE. One of the little globules constituting a compound berry; as of the raspberry.

Ac'inus. Acine.

ACOTYLED'ONOUS plants. Having no cotyledons, or seed-lobes: and consequently producing no seminal leaves. See Cotyledon and Seed-leaves.

Aculea'tus. Prickly.

Acu'leus. Prickle.

ACU'MINATE. When the leaf, calyx, &c. terminate suddenly in a point, which is more or less curved towards one edge of the leaf.

Acumina'tus. Awl pointed. Acuminate.

Acutangula'ris. Sharp-cornered.

ACU'TE. Any part of a plant ending without a curved or rounded termination. An obtuse angle or any other angle in mathematics, is acute in botanical language.

Acu'te. Acutely. As *acute-dentatus*, sharply toothed.

Acutius'culus. Acutish. That is, the apex, corner, &c. is hardly rounded so as to be called obtuse, and is rather too nearly round to be denominated acute. The termination *ish* as a diminutive is now sufficiently authorised by Smith and others.

ADEL'PHOUS. Applied to plants whose stamens are united by their filaments, whether in one, two, or more sets.

ADNA'TE. Adhering. Any two or more parts of a plant being attached to each other, in cases where analogous parts are separate in other plants. As the bulbous offsets of Daffodil. The stipule in some cases is detached from the petiole, in others it is adnate, &c.

Adna'tus. Growing together. Adnate.

Adpre'ssus. Appressed.

Adscen'dens. Ascending.

AD'VERSE leaf. Presenting its under surface to the sun. One edge presented towards the stem.

Æquival'vis. Valves of a capsule equal among themselves. It is also applied to valves (chaffs) of a glume calyx.

Æruginо'sus. Light bluish green, verdigris colour.

Æstiva'tio. Summer residence. See Æstivation.

ÆSTIVA'TION. The manner in which petals lie in the flower-bud, and leaves in the leaf-bud, before they open. 1. *Convolute*, petals or leaves rolled all one way like a roll of paper or cloth. 2. *Imbricate*, petals or leaves lying over each other so as to break joints, like shingles on a roof. 3. *Conduplicate*, each petal or leaf having its edges rolled in, till the two opposite rolls meet on the midrib. 4. *Valvate*, when, just before they open, they stand like the husks of an ear of Indian corn. 5. *Unequal-valved*, when the petals differ in size. See Foliation.

Affi'nis. Having relation, or affinity, to something supposed to be previously known.

Aga'mia. (*a* without *gamia* matrimony,) Necker's name for the class *cryptogamia*.

A'GES of plants. Some plants spring up, flower, ripen seed, and die in a few hours or a day, which are called *ephemeral*. Others live a few months, or a summer, which are called *annual*. Others spring up in one summer and ripen and die the next, which are called *biennial*. Others live an indefinite period, either with the whole stem and branches, or only by the root, which are called *perennial*.

The ages of trees may be

known by counting the concentric rings, or grains. Our author, Richard, supposes that trees have their ages. 1. The age of increase, or growth. 2. The age of maturity, when there is no increase. 3. The age of decay. But is there not sufficient proof, that all trees, while in a living state, continue to deposit new layers of wood every year? If so, the age of maturity must be rejected.

Ag'gregate. Many springing from the same point, or from the same receptacle. Sometimes this term is rather loosely applied to heaps or bundles.

Aggregate flowers are those where several stand on the same receptacle without united anthers. These flowers have rarely any inclination to yellow colour like compound flowers; but are blue, purple, or white. Applied to minerals it signifies that several simple minerals are united in a mass by adhesion, or by a cement.

Ai'grette, E'gret. The flying, feathery or hairy crown of seeds; as the down of thistles and dandelions. It includes whatever remains on the top of the seed after the corol is removed.

—— *stiped* (stipulatus) when it is supported on a foot-stem.

—— *simple* (simplex) when it consists of a bundle of simple hairs, without branches.

—— *plumose* (plumosus) when each hair has other little hairs arranged along its sides, like the beards on a feather.

—— *membranous*, thin transparent leaves.

Martyn recommends this term under the word *pappus*; Barton adopts it, and Ives approves. On these authorities, it is introduced here from the French botanists.

Ai'gretted. Bearing egret.

Al'la. See Wing.

Ala'ted, *Ala'tus*. Having wings.

Al'bicans. Whitish, growing white.

Albu'men. The farinaceous, fleshy, or horny substance, which constitutes the chief bulk of monocotyledonous seeds; as wheat, rye, &c.

Albur'num. See Aubier. Sapwood.

Al'gae. Linneus comprised the plants of the orders Hepaticæ and Lichenes under this order.

A'lienated. When the first organs, as the stamens, leaves, &c. give place to others different from the natural habit of the plant.

Alliaceous. Emitting the odour of garlick.

Alluvion. Detritus, which is formed by the process of washing from the place of disintegration.

Al'pine. Growing most naturally on high mountains.

Alter'nate. Branches, leaves, flowers, &c. are alternate, when arranged upon opposite sides of the stem, or whatever supports them; beginning at different distances from its base, and continuing in nearly equal series. Sometimes they are in three series.

Alter'nating. When one organ is arranged alternately respecting another; as the stamens, in the first ten classes, mostly alternate with the petals, or divisions of petals.

Aller'ne pinna'ta. Alternately pinnate.

Alve'olate receptacle. Having cells so as to resemble a honeycomb, with more or less of each seed imbedded in it.

Alveola'tus. See alveolate.

Alutaceous. Tan-colour. The colour of soal-leather.

Ambitus. Periphery. The outer rim of a frond, receptacle, &c.

A'ment. An assemblage of small flower-bearing scales, which serve as lateral calyces. These

are arranged along a kind of rachis, and each encloses either the stamens or pistils of flowers. The pine, willow, oak, chesnut, walnut and nettles are good examples.

Amenta'ceus. Growing in aments, amentaceous.

Amen'tum. See ament.

AMPHIBIOLOGY. The department of Zoology, embracing animals which are capable of suspending respiration for a long time without producing bad effects. As frog, snake, tortoise, lizard.

Amplexicau'lis. See clasping. Embracing the stem.

Am'plius. Enlarged, abundant.

Ampul'lus. See utriculus. Bladder.

ANAL. Situated near the vent, or between it and the tail.

ANALLUVION. Applied to detritus which has not received its present character from being washed.

ANAL'OGY. In botany, it is frequently necessary to reason from analogy. That is, after becoming acquainted with those organs which usually accompany each other, if we discover one of them in analysing plants, we frequently assume the existence of others when the latter are too minute for inspection. This principle becomes indispensable in most cryptogamous plants.

ANAL'YSIS. To analyse a plant *botanically*, is to search out the name by the number, form, position, &c. of its organs, as they exist in a natural state.

ANASTOMOSIS. A meeting of mouths. When veins, tubes, &c. join in one, at, or towards, their extremities.

An'ceps. See ancipital. Two-edged.

ANCIP'ITAL. Two-edged. Having two opposite edges or angles.

ANDROG'YNOUS plants. Bearing staminate and pistillate flowers on the same root without any perfect ones; as the Indian corn.

—— *spike*, has both staminate and pistillate flowers distinct on different parts of it.

—— *flower*, has stamens or pistils only, and is on the same plant with other flowers having different organs from itself.

Androg'ynus. See androgynous.

ANFRAC'TUOUS. Winding by angular turnings.

Angiocar'pus. Fungi bearing seeds internally.

AN'GULAR. By means of intervening grooves, the stems, calyces, capsules, &c. often have ridges running lengthwise, which give them this appellation. Sometimes the angles project considerably; particularly the side-points or projections of leaves, which are also called angles.

Angula'tus. See angular.

Angustifol'ius. Narrow-leaved.

AN'NOTINE. Of one year.

AN'NUAL. Which springs up, perfects fruit, and dies in the same year. The herbage is often annual with a perennial root. But the root is always intended, unless the other parts are particularly mentioned.

Annula'tus. Having a ring around the capsules in ferns; or a fungus with a ringed stipe. See ring.

An'nulus. See ring.

An'nuus. See annual.

ANOM'ALOUS. (*a* without, *nomos* law.) Whatever forms an exception to the assumed rules or systems. In the attempts of old botanists at natural arrangement, many plants were necessarily thrown into anomalous groups.

ANTENNAE. The horns or jointed processes on the heads of insects.

AN'THER. See p. 5.

ANTHERID'IUM. Used by Nuttall for a mass of pollen.

ANTHERIF'EROUS. *Antherif'era.* Flowers bearing sessile anthers; that is, anthers without filaments.

ANTHEROID. Having the appearance of an anther.

Antho'dium. See perianth calyx.

Aper'tio. See blooming.

AP'ERTURE. In conchology it is used for the mouth of a shell, or entrance to the animal's residence. It is of various forms, as angular, rounded, moon-form, linear, &c.

APET'ALOUS. A flower without a corol. See stamineus.

AP'EX. The tip or end. Summit of the spire of a shell.

APHYL'LOUS. Leafless.

Apicula'tum. Covered with fleshy, erect, short points.

Apoph'ysis. A process from the base of the theca of mosses.

Apothe'cium. The receptacle of lichens, being the part whereon the seeds are formed and ripened. The saucer-form cups on those greenish leathery scabs on fences and stones, are examples. See Border of Lichens.

APPEN'DAGE. As thorns, tendril. See p. 10.

APPENDIC'ULATE. Appendaged. Having something attached to a leaf, corol, &c. as a wing on a petiole, a nectary at the end of a petal as in some species of Polygala, &c.

APPEN'DICULE. Appendiculate. Having a little appendage.

APPRES'SED. Closely pressed; as leaves against the stem, &c.

APPROX'IMATE. Growing near each other, or near to a different part.

AP'TEROUS. Without wings.

AQUAT'IC. Growing most naturally in or near water.

Arachnoi'deus. Covered with interwoven hairs, so as to resemble a spider's web.

Aranea'sus. See arachnoideus.

Ar'bor. See tree.

AREO'REOUS. Tree-like. Applied to mineral impressions.

ARBORES'CENT. Becoming woody when approaching maturity.

Arbus'cula. See suffrutex—somewhat woody.

Arbusti'vus. Bush-like.

ARCH'ED. Curving above. See vaulted.

AR'CUATE, *Arcua'tus.* Bent like a bow. See bowed.

Arcua'tim. Archwise, curved.

Arena'rius. Growing in sand.

Areola'tus. Raised a little so as to resemble a garden-bed. Cushion-like.

Argen'teus. Silver-coloured.

Argu'tus. See sharp.

Argyroc'omus. Silky and silvery white.

AR'ID, *A'ridus.* Dry and rough.

A'RIL, *Aril'lus.* The outer coat of a seed, which, not contracting with it in ripening, falls off. Scopoli calls it *Theca*, but this name is now exclusively appropriated to the capsule of mosses.

ARIS'TATE, *Aris'ta* and *Arista'tus.* See awn and awned. Bearded.

ARMS. The spines and prickles of plants.

Aromat'icus. Aromatic, sweet-scented.

AR'ROW-FORM. Shaped like an arrow-head. It differs from heart-form in having the hind-lobes acute.

Artic'ulus. See joint.

ARTIC'ULATED. Jointed; which see. Articulated division of animals includes those which have jointed abdomens; as angle-worms, lobsters, spiders, and wasps.

Articula'te. Jointedly.

Arundina'ceus. Resembling reeds.

Arven'sis. Growing in cultivated fields.

ASCEN'DING. Rising gradually between a horizontal and vertical position.

Acid'ium. Bottle-form leaf or ap-

pendage; as on the *Sarracenia.*

As'PERATE, *As'per.* See rugged. Rough.

Asperifol'ius. Rough-leaved.

ASSUR'GENT, *Assur'gens.* Rising in a curve from a declined base.

ASTI'PED. Pappus, or a fungus without a stem, or stipe.

Atropurpu'reus. Dark purple.

ATTEN'UATED, *Attenua'tus.* Tapering gradually till it becomes slender. Long and slender.

AU'BIER. Sap-wood, the last year's deposit.

Auc'tus cal'yx. Having an outer row of leafets; as the Dandelion.

Ave'nium. Veinless.

AVERTEBRAL. Animals without back bones; as insects, oysters, angle-worms.

AULULET. Spurious wings. A tuft of 3 or 5 feathers on the outer fore-joint of a bird's wing.

Auranti'acus. Orange-coloured.

Aure'us. Gold-coloured.

AURICLES. Appendages to the heart; being small cavities above the ventricles.

Auricula'tus or *auri'tus.* See eared. Ear-like.

Autumna'lis. Coming to maturity in autumn.

Autumna'tio. The effect of autumn on plants.

AWL'-FORM. Linear at, and adjoining, the base; and becoming sharp and more or less curved to one side at the point.

AWL'-POINTED. Acuminate.

AWN. A short slender process, or stiff beard, proceeding from the top or back of glumes, or chaff. Processes resembling awns are called by this name, which proceed from anthers or any other parts of vegetables.

AWN'ED. Having awns.

AWN'LESS. Without awns; sometimes it means a blunt pointless awn.

AX'E-FORM. Nearly cylindric towards the base, with one side projecting towards the end; which projection is sharp-edged.

AX'IL. The arm-pit. Applied to vegetables, it means the angle formed by the meeting of a leaf or petiole with the stem, or of a branch with the main stem.

AX'ILLARY. Any thing growing from the axils.

Azu'reus. See Cœruleus. Blue.

B.

Bac'ca. See berry.

Baccif'erous. Berry-bearing.

Baccil'lum. Pedicel of lichens.

BACK. The side of a univalve shell, which is opposite to the side in which the aperture is placed.

Ba'dius. Liver-brown.

BAN'NER. The upper petal in a papilionaceous flower.

BARB. A strait process armed with teeth pointing backwards.

Bar'ba. See beard.

Barba'tus. See bearded.

BARK. Properly the inner strong fibrous part of the covering of vegetables. But in a more extended sense it includes also the *cuticle* and *cellular integument*; which see. Also see Cortex.

BAR'REN. Producing no ripe seed. See *staminate, neutral* and *abortive.*

Bas'is. Base. The part of a stem, leaf, flower, &c. nearest to the place through which it derives its nutriment. The extreme end of a univalve shell, opposite to the apex of the spire; and the side or end opposite to the hinge of the bivalve shells.

BEAK. One side of the aperture of a univalve shell extended in the form of a beak; as murex. In a bivalve, it is the tip of the spiral part near the hinge.

BEAK'ED. Terminated by a process, formed like a bird's bill.

Beard. Parallel hairs. It is applied to the filamentous nectaries on the petals of Iris. The lower lips of ringent corols are sometimes called beard. Tendril-like appendages near the mouth of the sturgeon and of some other fish.

Be'ardless. Destitute of beard.

Bell'-form. Swelling out at the base and without a tube. Properly applied to monopetalous corols only; but it is frequently extended to liliaceous flowers, and some others.

Belly. It is the swollen part of the body of a univalve shell. See Body.

Bel'lying. See Ventricose. Inflated.

Ber'ry. A pulpy pericarp enclosing seeds without capsules.

Bib'ulus. Sucking water.

Bicap'sular. Two capsules to one flower.

Bicor'nis. Anthers with two horns, or two horn-form processes.

Bicus'pidate. Having two lengthened points, each terminated with a small bristle.

Bid'ens. Having two teeth.

Bien'nial. Springing up one summer, flowering and dying the next, as wheat.

Bifa'rius. Facing two ways, presenting two opposite series.

Bif'erous. Bearing twice in a year. Common in hot climates.

Bi'fid. Two cleft, split into two divisions.

Bif'idus. Bifid.

Biflo'rus. See two-flowered.

Bif'arus. Having two openings or holes.

Bifurca'tus or *Bifur'cus.* Forked.

Bigem'inate. Twin-forked. Having a forked stem with two leaves on each part.

Biglan'dulous. Having two glands.

Bi'jugous. A pinnate leaf with two pairs of leaves on each part.

Bila'biate. Corol with two lips; as in most of the class *didynamia.*

Bilam'ellate. Composed of two lamellæ; it applies to a flattened stigma split lengthwise.

Bilo'bate. Divided into two lobes.

Biloc'ular. Two-celled.

Bi'nate. Two standing up together on the top of one stalk. If they spread out horizontally, they are called *conjugate.*

Biner'vis. Two-nerved.

Bipart'ible, or Bipar'tile. Naturally divisible into two parts.

Biparti'tus. Divided into two parts to the base, but still remaining in one piece; as the petals of *stellaria.*

Bipin'nate. Doubly pinnate.

Bipinnat'ifid. Doubly pinnatifid.

Biros'trate. Having two beaks.

Biseria'lis. See Lamella. In two thin series.

Bistri'ate. Having two slender lines.

Bisul'cate. Having two furrows or grooves.

Bitter'nate. Doubly-ternate.

Bi'valve. When a capsule is composed of two pieces, or valves; or when the glume calyx of grass, &c. consist of two chaffs, or husks. When used in Zoology, it refers to the two parts of the shell of such molluscous animals as oysters, clams, &c.

Bivasscula'ris. With two horn-form or cup-form cells.

Blis'tered. See bullate.

Bloom'ing. The precise time when all parts of the flower are completely developed.

Blos'som. The corol.

Blunt. Round-obtuse.

Boat'-form. Hollowed one side with a compressed longitudinal ridge on the opposite side.

Body. It is the first whorl at the base of a univalve shell; the most swollen part of which, is called the belly.

Bole. The naked trunk of a tree.

Bor'der in Lichens. The edging of their receptacles (apothecium.) It is *proper*, when of the same substance and colour of the receptacle. It is *accessory*, when of a different substance or colour from the disk of the receptacle.

Bor'der of corols, leaves, funguses, &c. The spreading brim.

—— *tenuis.* Thin border of a fungus.

—— *colorata.* Coloured border.

—— *equalis.* When the stem of a fungus is in the centre.

—— *crassa.* Thick border, &c.

Bos'sed. Bunched up in the centre; as in some *agarics.*

Botan'ical names of plants. They should always have a Latin termination, in order to be equally convenient for all nations.

Bot'rus. A cluster, like grapes.

Bough. See branch.

Boulder. A large fragment of a rock. This term is applied to all masses of rock, which are severed from a main rock, if the size is above that which is usually denominated a pebble.

Bow'ed. Curved over downwards.

Bowl'-form. About half of a hollow sphere.

Brac'hiate. Branches nearly horizontal and *decussate.*

Brach'ium. See Measures. Arms-length.

Bract. *Brac'ted.* Floral leaf. A leaf near or among flowers, which differs in shape, or colour, or both, from the other leaves of the plant; as on the bass-wood, *(tilia.)*

Bractea'tus. Bracted, having bracts.

Bracteifor'mis. Resembling bracts.

Branch. A division of the main stem, or main root.

Branch'ed. Divided into branches. Applied to roots of trees.

Branch-leaves. Leaves growing on branches.

Branch'let. Subdivision of a branch; a twig.

Branch-pe'duncle. A peduncle proceeding from a branch.

Brev'is. Short.

Brevis'simus. Very short.

Brist'les. Very stiff hairs. They are simple or hooked.

Brist'le-form. Nearly proportioned to a bristle in length and breadth.

Brist'ly. Set with bristles.

Bronchial. Applied to fish it means, pertaining to the gills.

Bruma'lis. See Hyemalis. Wintery.

Brun'neus. Brown, dusky, dun.

Bud. The winter residence of leaves and flowers. Generally wanting in hot countries. They are defended by imbricate scales and mostly by a clammy glutinous substance also. They are;

1. *Leaf-bearing.* Which are more slender and sharp.

2. *Flow'er-bearing.* Which are thicker, not so hard nor so sharp.

3. *Leaf and flow'er-bearing.* Which are generally smaller than either of the other kinds. See foliation.

Bule. *Bulbus.* Bulbous roots. Though we call the turnip, the onion, &c. roots, they are strictly buds; or the winter residence of the future plants. Some bulbs are borne above ground, as on several species of onion, *(allium.)*

Bulbif'erous. Producing bulbs above ground.

Bulbo'sus. Bulbous. Growing from bulbs.

Bulb'ous root. Fleshy and spherical.

Bul'bulus. Small lateral bulbs shooting from larger ones.

Bul'late. Raised in bunches or blisters; as when the parenchymous substance of a leaf rises up between the veins.

Bun'dle. See fascicle.

But'terfly-form. See papilionaceous.

But'tons, *Tri'cæ.* That kind of receptacle of lichens which

when magnified resembles a coiled horse-hair. They are roundish, sessile, unexpanding, compact, black, and solid; continued along their whole surface. Upper side they are in concentric, or coiled, plaited and twisted folds; covered every where with the same membrane; containing seeds without cells, or cases. Smith.

Byssus. Flax-like, silky, or hair-like fibres at the hinge of some bivalve shells. It is applied to some fungi, &c.

C.

Cadu'cous. Any part of a plant is caducous, which falls off earlier, compared with other parts of the same plant, than is usual for similar parts in most plants. As the calyx of the *poppy* falls off before the corol is hardly expanded.

Cæsius. Sky-blue, pale-blue, grey.

Cæs'pitose. Turfy. Several plants growing together, or from the same root, forming a turf.

Cal'amus. Reed-like.

Cal'car. A conic spur. See Spur.

Cal'carate. See spurred.

Calciferous. Bearing calx. An old term for carbonate of lime. Applied to sand rocks, &c. which contain carbonate of lime.

Calic'iform. See Calyciform. Cup-like.

Calic'ulate, *Calicula'tus.* Having a smaller outer calyx. See auctus.

Ca'lix. See calyx. Leaf-cup.

Calyc'iform. Resembling a perianth calyx.

Ca'lycine. Appertaining to a calyx.

Calyc'inus or *Calic'inus.* See Calycine.

Ca'lycle. The outer calyx-like part of the crown of some seeds. Also see auctus.

Ca'lycled. See auctus. Having an outer calyx.

Calyc'ulus. See calycle.

Calyp'tra. Calyptre, or veil. The cap or hood of pistillate mosses; resembling in form and position an extinguisher set on a candle. It is ranked among calyxes, and so used in descriptions. But in reality it is the corol closed; which after being detached at the base like other corols, its form still keeps it on the capsule a while. See villose, also *Perichætium*, which is the true calyx of mosses.

Calyptra'tus. Having a calyptre.

Ca'lyx. *(Kalux, Gr.)* That floral organ which proceeds from the germ, receptacle, or peduncle, below all the other organs.

If the stamens alternate with the leafets or divisions, Linneus calls it a corol; and if the stamens stand opposite to the leafets or divisions, he calls it a calyx, without regarding the colour or texture. Where the stamens are numerous, this rule cannot apply; neither has Linneus made it necessary in his descriptions.

Wildenow's rule. The calyx is hardly as long as the stamen; the corol quite as long or longer; the calyx green and firm; the corol coloured and tender. This rule is to apply where but one of the organs is present; and he allows a few exceptions to this.

—— *double.* When one calyx is outside of another; as in the *holly-hock*, (althea.)

—— *common.* When one calyx includes many florets, as the thistle.

—— *proper.* When a floret is included in a general calyx of its own.

There are seven kinds of calyx: 1. Perianth. 2. Involucre. 3. Spathe. 4. Glume. 5. Ament.

6. Calyptre. 7. Volva. See each.

CAMB, *Cam'bium.* Du Hamel's name for the mucilaginous or gelatinous substance between the wood and bark. See p. 7.

CAMPAN'ULATE, *Campanula'tus.* See bell-form.

Campes'tris. Growing in uncultivated fields.

CANAL. The channel or gutter along the beak of a univalve shell.

Canalicula'tus. See channelled.

CAN'CELLATE, *Cancella'tus.* See latticed.

CANESCENT. Becoming white or hoary.

Capilla'ceus. See capillary.

CAP'ILLARY, *Capilla'ris, Capilla'ceus.* Hair-form; longer than bristle-form in proportion to its thickness.

Capillus. Hair. See pilus.

CAP'ITATE, *Capita'tus.* Head-form; growing in heads.

Capit'ulum. See head.

Capre'olus. See tendril.

CAPRIFICA'TION. The fertilizing of pistillate flowers by sprinkling pollen upon them. This is important in raising figs.

CAP'SULE, *(cap'sula,)* a little chest. That kind of pericarp, which opens by valves and becomes dry when ripe; not including siliques nor legumes. When it is one-valved, it is called a FOLLICLE, *folliculus*, which see. It consists of *valves*, *partitions*, *columella*, and *cells*, which see. One kind of capsule never opens and is called *samara*.

Cari'na. See keel.

CAR'INATE. See keeled.

Carina'tus. See keeled.

CAR'NEOUS, *Car'neus.* Flesh-coloured. Nuttall uses it for fleshy.

CARNO'SE, *Carno'sus.* Fleshy.

CAR'POGENA'TION. (*Karpos*, fruit; *gennao*, to bring forth.) A substitute for the word *fructification*.

CARTILAGE. Flexible, fibrous, compact substance; often called gristle. Applied to animals mostly.

CARTILAG'INOUS. Hard and somewhat flexible. It applies to a leaf, when it is bound around with a strong margin, different from the disk of the leaf.

CARUNCLE. Fleshy protuberance on the heads of some birds, as turkies.

CARYOPHYL'LEOUS. Pink-like, as to the corol; having five petals with long claws, all regular and set in a tubular calyx.

CATAPHRACTED. Callous skin, or cartilaginous scabs.

Castra'ta. Filaments being without anthers.

Cate'nula. A thread in some mosses, serving to unite or chain together the seeds.

CAT'KIN, *Catulus.* See ament.

CAUDAL. Pertaining to the tail or posterior extremity.

CAU'DATE, *Cau'da.* See tail.

Cau'dex. The main body of a tree or root.

CAULES'CENT, *caulescens.* Having a *caulis*, or stem, exclusive of the peduncle or scape.

CAU'LINE, *cau'linus.* Growing on the main stem.

Cau'lis. The main herbage-bearing stem of all plants, except of the grassy kind; as trees, weeds, &c. We have no English name for this stem, unless we adopt the French, tige.

CELL. The hollow part, or cavity of a pericarp or anther. It is more generally applied to the cavities of pericarps, where seeds are lodged. According to the numbers of these the pericarps are called *one-celled*, *two-celled*, &c.

CEL'LULAR INTEG'UMENT. The parenchymatous substance between the cuticle and bark. This substance is generally green. It constitutes the most considerable part of leaves; in

which the juices are operated upon by air and light, and the peculiar secretions of vegetables principally elaborated.

CEL'LULES, *cis'tulæ*. That kind of receptacle of lichens, which is globose, terminal, and formed of the substance of the frond. It is filled with uncoated seeds, intermixed with fibres; at length it bursts irregularly. Smith.

Cellulo'sus. Cellular. Having cavities within, which are small and irregular; and in which sometimes granules are nested.

Centra'lis. In the centre.

Cephalo'dia. See knobs.

CERE. Membrane covering the base of a bird's bill.

Cerea'lis. (*Ce'res*, goddess of corn.) Any grain of which bread is made.

Cer'nuus. When the apex or top only droops or bends down. See *nutans*, and the difference in the two terms.

CERVINUS. Fawn-coloured. The colour of the fine light hair of a deer. Very pale reddish yellow.

CES'PITOSE. See Cæspitose. Turfy.

CHAFF. Thin membranous covering of the seeds of grass, grain, &c. See glume. It is also applied to whatever resembles chaff; as the substance left on the receptacles of some compound flowers, after the seeds are removed; to the crown of some seeds, &c.

CHAF'FY. Bearing chaff.

CHAMBERS. The cells, or separate spaces, in shells. They are connected by a siphunculus.

CHAN'NELLED. Hollowed out longitudinally with a rounded groove of considerable depth.

CHAR'ACTER. That description of a plant, which distinguishes it from all others. In making out the character, situation, proportion, connection, number and figure, are considered. The two last are not so constant as the other three.

Generic characters are limited to the flower and fruit.

Specific characters are restricted no farther, than to avoid running into the characters of the genus.

CHELATE CLAWS. At the end of fore-legs of some insects. They resemble forceps, like lobsters' claws.

CHO'RION. A clear limpid liquor contained in a seed in the time of flowering. This liquor, after the pollen is received, becomes a perfect embryo of a new plant, and takes the consistence usual in perfect seeds. But without the reception of the pollen, neither any thing like the embryo or perfect seed, is ever formed. Malpighi.

Chrysoe'omous. Golden locks; or a yellow bundle of thread.

CIC'ATRICE, *Cica'trix*. The mark or natural scar from whence the leaf has fallen.

CIL'IATE, *cilia'tus*. Edged with parallel hairs or bristles, resembling eye-lashes.

CINE'REOUS. Of the colour of wood-ashes.

Cin'gens. Surrounding, girding around.

CIR'CINAL. Rolled in spirally beginning with the tip, which continually occupies the centre; as ferns.

Circina'tus. Circinal. Also compassed about.

Circumsi'sus. Cut round. Opening transversely, not lengthwise; as the capsule of purslane.

Circumscrip'tio. The circumferance of a leaf.

Cirrif'erus. Bearing tendrils.

CIRRO'SE, *cirro'sus*. Terminating in a tendril.

Cir'rus. (Curled bushy hair.) A tendril or climber.

Cis'tulæ. See Cellules. Little hollows.

Clam'my. See viscid.

Clas'per. See tendril.

Clas'ping. The base of the leaf being more or less heart-form and sessile, so that the two hind lobes partly surround the stem.

Class, *clas'sis*. The highest division of bodies in a system. Each class is defined to be the agreement of several genera in the parts of fructification, according to the principles of nature, distinguished by art. Linneus divided all plants by their stamens and pistils, into 24 classes; but Persoon and other approved systematic writers have distributed the plants of the 18th and 23d classes among the others, and rejected these two; leaving but 22 classes. These are rejected on account of the liability of their characters to perpetual variations. On the same ground the class dodecandra may be rejected; leaving but 21 classes.

Cla'vate, *clava'tus*. Club-form. Growing larger toward the end.

Clavic'ula. See tendril.

Clau'sus. Closed, shut up.

Cla'vus. See spurred rye. Ergot.

Claw. The lower narrow part of a petal by which it is fixed on the calyx or receptacle. It can exist only in polypetalous corols.

Cleft. Split down, not exceeding half way to the base; with nearly strait edges on both sides of the fissure. The parts into which it is split are numbered in descriptions; as once split making two divisions, is called 2-cleft; two splits 3-cleft, &c.

Clefts, *lirel'læ*. That kind of receptacle of *lichens*, which is open, elongated, sessile, black, very narrow or linear, with a somewhat spongy disk; the border is parallel on each side and proper. Sometimes it has an accessory border from the crust besides. The *clefts* are either simple and solitary; or aggregate, confluent and branched. Smith.

Cli'mbing. Ascending by means of tendrils, as grapes; by leaf-stalks, as virgin's bower; by cauline radicles, or rootlets, as the creeping American ivy, (rhus radicans.) It differs from *twining*, which see.

Cloaca. A general vent for eggs, urine, and foeces, as of birds, &c.

Clouds. They may be divided into the Regular and Irregular.

Regular Clouds.

1. *Strato'se clouds*. They are those stratified horizontal ranges of vapour, which often appear in the morning, near and adjoining the earth; usually called fog. When the sun shines upon them, they ascend gradually in a highly rarified state; and at length reunite in another form and take the name of

2. *Cumulo'se clouds*. They are those bright shining clouds, which have their bases straitish with their upper sides in roundish brilliant heaps. They mostly float awhile near the horizon in detached masses, and then gradually break up and ascend still higher in fine flakes or sprays, and form

3. *Cirro'se clouds*. They are those fibrous clouds which resemble flax when it is gradually pulled from the distaff. They are the highest of all clouds; often forming at the height of five or six miles. After a few hours, they generally settle down gradually, and become

4. *Cir'ro-cumulo'se clouds*. They are those which are formed by the knotting or curdling of cirrose clouds. When first forming, they exhibit rows of small heaps, often in long regular curved lines very

near each other. Sometimes they become confluent, and at length cover the whole sky. This last variety furnishes the materials for long steady rains. But they generally break up in fair weather in the afternoon, and out of their fragments are made

5. *Cir'ro-stralo'se clouds.* They are those stratified patches, seen near the horizon, mostly at evening; generally disappearing entirely after dark.

REMARK. This is the usual process during the pleasant part of spring, summer and autumn. In the year 1815, I kept an exact diary of clouds at Greenwich, in New-York, more than five months. I found this to be their regular course more than half of that period.

IRREGULAR CLOUDS.

6. *Nimbo'se clouds.* They are those dense clouds, which ascend from the horizon, at first with heads like the cumulose, which soon shoot into cirrose branches extending towards the zenith. They are usually called thunder-clouds, and almost always bring showers.

7. *Vello'se clouds.* They are those fleecy clouds, which fly swiftly about the sky, of an open texture, without any defined sides or bases. One variety of those clouds is called scud.

8. *Cu'mulo-stralo'se clouds.* They are the most rare, as well as the most remarkable of clouds. But one appeared in the year 1815, and I have observed but two since, (13 years.) A cumulous-like cloud seems to rise up from the horizon in a compressed channel, and to become united with a cirrostratose cloud. Soon after this union, the cloud spreads out to great extent, and finally covers a great proportion of the hemisphere; while its base or stem remains as at the commencement. Its form and sudden growth have given it the appellation of mushroom-cloud. I have never seen this cloud except at six or seven o'clock in the afternoon.

CLO'VEN. See cleft.

CLUB. The clavate part of a fungus, which supports the fruit or bears the seed.

CLUB'-FORM. See clavate.

CLUS'TERED. See racemed.

CLY'PEATE, *Clypea'tus.* Form of a buckler. See peltate.

COAD'UNATE. With united bases.

COAETA'NEOUS, *Coaeta'nus.* Existing at the same time. Applied to willows and to some other plants, it implies that the flowers and leaves appear at the same time.

CO'ALIT, *Coali'tus.* Thickened, increased, or pressed together, as the anthers of potatoe flowers.

COARC'TATE. Compact. Pressed or squeezed close together.

COAT'ED. Consisting of concentric coats, layers or skins, as the bulbous roots of onions.

COB'WEBBED. See arachnoideus.

Coccin'eus. Scarlet-coloured.

Coc'cum. A grain or seed. Tricoccous, 3-seeded; pentacoccous, 5-seeded, &c.

COCH'LEATE, *cochlea'tus.* Coiled spirally, like a snail-shell.

Coeruleo-purpu'reus. Bluish-purple, violet colour.

Coru'leus. Blue.

Cohe'rens. Cohering, attached.

COIL'ED. Twisted like a rope; or rather resembling the form of one thread of a rope, after the other threads are removed.

Colli'nus. Growing on hills.

COL'OURED. Of any hue except green; but in the language of botanists green parts are not coloured. See temperature, also glaucous.

Colora'tus. Coloured.

Columel'la. That which connects the seeds to the inside of a pericarp. It is generally applied to a central pillar in a capsule; which takes its rise from the receptacle, and has seeds attached to it on all sides. In mosses it is called *sporangidium* by Willdenow; and he sometimes applies this term as a substitute for *columella;* and says it is found only in 2-valved capsules. Applied to shells, it means the pillar formed by the spire, commencing with the left lip.

Column. Applied to a thick strong style.

Colum'nar. See terete. Round and tapering.

Columnif'era. Stamens and pistils disposed in the form of a column.

Com'a. (*Kom'e*, a head of hair.) A tuft of bracts on the top of a spike of flowers.

Commis'sure. The place where one thing or part is joined to another. Nuttall applies it to sides or edges of two seeds, growing on umbelliferous plants, where they are joined together; as those of the carrot and fennel.

Com'mon. Any part is common, which serves to include or sustain several parts, similar among themselves.

—— *perianth.* Including several florets; as in the thistle.

—— *involucre.* Surrounding the base of the peduncles, in an umbel, which are subdivided above. This term is often used for *frequent* also.

Commu'nis. See common.

Como'se. Having a coma, or lock of hair.

Compac't. See coarctus.

Comple'te, *comple'tus.* Having both calyx and corol. When the corol is wanting, the flower is *incomplete.* When the calyx is wanting, the flower is *naked* if it has a corol.

Com'plicate, *complica'tus.* Folded together.

Composi'tus. Compound.

Com'pound. One whole, formed of many similar parts.

—— *flowers.* Those comprised in the class *syngenesia*, with several florets on one receptacle, each with united anthers. See p. 6 & 10.

—— *leaf.* When several leafets grow on one petiole.

—— *raceme.* When several racemes grow along the side of a peduncle.

—— *spike.* When several spikelets grow along the side of a fruit-stalk, or general spike.

—— *umbel.* Having the peduncles subdivided into peduncles of lesser umbels, &c.

—— *petiole.* A divided leaf-stalk.

—— *peduncle.* A divided flower-stalk.

Com'pound terms. When any part of a plant is to be described, which does not agree with the definition of any term in use, two or more terms must be compounded, so as to convey to the mind correct descriptions. For example, the chesnut leaf has notches on the margin pointing towards the apex, which answers to the description of serrate leaves; excepting that the notches are hollowed out. But these hollowed notches are not deep enough for sinuses; therefore the two terms are compound, making *sinuate-serrate.* Compound terms are always united by a hyphen.

Compres'sed, *compres'sus.* Flattened, as if squeezed or pressed.

Con'cave, *con'cavus.* Hollowed a little on one side. It is sometimes applied to deeper hollows; though rarely.

Concepta'culum. See follicle, single-valved capsule.

Conchology. The science of shells. It is divided into the Univalve, Bivalve, and Multi-

valve ; which see—also see the terms, apex, base, front, back, sides, body, whorl, spire, aperture, lip, beak, operculum, chambers, siphunculus, slope, lunule, hinge, ligament, cicatrix, &c.

Con'color. The same colour in all parts.

CONDEN'SED. See coarctate.

CONDU'PLICATE. That kind of foliation where the leaf, while in the bud, has its two sides shut together, like two leaves in a book.

CONE, *co'nus.* See strobile.

CONFER'T, *confer'tus.* Thick-set ; leaves, flowers, &c. standing so closely together, as to seem to crowd each other.

CON'FLUENT. Running together. It is applied more particularly to the receptacles of some lichens, which run together in disorder, and become indistinct.

CONGE'NERES. Plants of very similar habits, &c.

Conges'tus. See heaped.

CONGLOM'ERATE. See glomerate. When used in geology, it is applied to aggregates of rounded pebbles.

CON'IC. With a broad base and approaching a point towards the top.

Coni'fera. Bearing cones.

CON'JUGATE. See binate. In pairs.

CONNA'TE. Leaves being opposite with their bases growing together, so as to form the appearance of a single leaf. Anthers are sometimes connate also.

CONNI'VENT, *Conni'vens.* See converging.

Concim'ilis. Resembling.

Contig'uus. Near, next.

CONTIN'UOUS. Uninterrupted.

CONTOR'TED, *contor'tus.* Twisted. It is also applied to corols, which have the edge of one petal lying obliquely over the next.

Contrac'tus. Close, narrow.

Contra'rium. See partition.

CONVER'GING. Approaching, or bending towards each other.

CON'VEX. Swelling out in a roundish form.

Convex'us. Convex.

CON'VOLUTE, *convolu'tus.* Rolled into a cylindric-form, like a roll of paper, lengthwise with the mid-rib. Applied to the situation of leaves in the bud.

COR'CLE, *cor'culum.* (*Cor*, the heart.) The embryo of the new plant in a seed, situated between the cotyledons in dicotyledonous seeds. It consists of the *plume* and *rostel*, which show themselves soon after vegetation commences. See plume and rostel.

COR'DATE. Heart-form ; so called from its supposed resemblance to the heart. It is hollowed behind with the side-lobes rounded at the base. See arrow-form.

COR'DATE-OB'LONG, COR'DATE-LANCE'OLATE, &c. partake of the formation of both compounds.

CORIA'CEOUS. Leathery or parchment-like.

COR'NERED. Having angles or corners. Three-cornered, four-cornered, &c. is often expressed trigonus, &c.

COR'NIFORM. Horn-form.

Cor'nu. A horn or spur.

CORNU'TE, *Cornu'tus.* Horn-form, or having horns or spurs.

CO'ROL, *coro'lla.* (A diminutive of *corona*, a crown.) The inner delicate covering of the flower, which constitutes its principal ornament in most cases. In a few cases, as the *bartsia coccinea*, the corol is dull and unsightly, while the calyx is gaily coloured. See petal and nectary.

COROL'LET, *corollula.* A little corol.

Corollif'erous. Bearing the corol

Corol'linus. Resembling, or appertaining to, a corol.

Coro'na. See crown.

Corona'rius. Forming a crown.

Corona'tus. Crowned; as the thistle seed is crowned with down.

Coro'nula. A little crown.

COR'RUGATED, *Corruga'tus.* Wrinkled. Applied also to ridges, in some measure resembling wrinkles.

COR'TEX. The bark, which see. It consists of a number of layers equal to the number of years the tree has been growing; though they are often too thin to be numbered. The inmost layer is called the *liber.*

COR'TICAL, COR'TICATE. Having its origin from the bark, or having bark.

Cortina. Used by Persoon for a spiderweb-like valve, being very thin and filamentous.

Coryda'lis. (*Kor'os*, a helmet.) Plants with helmet-form corols.

CO'RYMB, *Corym'bus.* Flowers umbel-like in their general external appearance, but their peduncles or supporting stems stand at different distances down the main stem; as yarrow.

Corymbif'era. Bearing corymbs.

COS'TATE, *costa'tum.* Ribbed.

Cot'tony. See tomentose.

COTYLE'DON. See p. 6.

COW'LED. When the edges meet below and expand above, and generally separate; as the spathe of the *arum*, Indian turnip.

Cras'sus. Thick.

CREE'PING. Running along the ground, or along old logs, &c. nearly in a horizontal direction, and sending off rootlets.

CRE'NATE. Scolloped, on the rim or edge. Notches on the margin of a leaf, which do not point or incline towards either the apex or base. When large crenatures have smaller ones on them, they are doubly-crenate.

CRE'NULATE. Very finely crenated.

CRES'CENT-FORM. Resembling the form of the moon from its change to half-fulled.

CREST'ED. Having an appendage somewhat resembling a cock's comb in form.

Cre'ta. Growing on chalky land.

CRIBROSE. Sieve-like.

Crini'tus. Long-haired.

Cris'pus. See curled.

CRIS'TATE, *Crista'tus.* See crested.

CROSS'-ARMED. See brachiate.

CROWD'ED. See confert.

CROWN. The calycle, hair, or feathers, on the top of some seeds; as the dandelion.

CROWN'ED. See coronatus.

CRU'CIATE. Cruciform, or resembling the cruciform.

Crucia'tim. Crosswise. Opposite pairs of branches or leaves successively crossing each other. See decussate.

CRU'CIFORM. (*Crux*, a cross.) Corols with four petals, whose lamina form a cross. Plants with such corols belong to the class *tetradynamia.*

CRUSTA'CEOUS. Leafy appearance, but consisting of small crusty substances lying one upon another.

CRYPTOGA'MIA. (*Kruptos*, concealed; *gamos*, marriage.) See p. 3, 15.

CRYPTOG'AMOUS. (*Kruptos*, concealed, *gamos*, marriage.) Belonging to the class cryptogamia. Applied to plants whose stamens are never manifest under the highest magnifying power.

CU'BIT. A measure from the elbow to the end of the middle finger.

CUCUL'LATE. See cowled. Hood-form, as the spathe of the Indian turnip.

CUCURBITA'CEOUS. Resembling gourds or melons.

CU'LINARY. Suitable for kitchen cookery.

CULM, *Cul'mus.* The stem of grain

and grass, when dry it is usually called straw. It is applied to all grassy plants; as Indian corn, sedge, sugar-cane, &c.

CULMIF'EROUS. Having culms, as wheat, Indian corn.

CULMIN'EOUS. Like the roof of a house. Top.

CULTRATE. Coulter-form. The beak of a bird resembling a plough-coulter.

Cum'ulus. Heaped.

CUNE'IFORM, *Cune'iforme.* See wedge-form.

CUP'FORM. Hollow within, resembling a little cup.

Cupula. Cup. The pileus of a fungus, which is open at the top; as those of the genus Peziza.

Cupula'ris. Cup-form.

CURL'ED. When the periphery of a leaf is too large for the disk, it becomes waved or curled.

CURV'ED. Bent inwards. See incurved.

CUSP. The bristle of a cuspidate leaf, calyx, &c. Nuttall.

CUS'PIDATE. Eye-tooth. Having a sharpened point and that tipped with a bristle, a prickle, or lengthened apex, not curved. See mucronate and observe the distinction; also acuminate.

CU'TICLE. The thin outside coat of the bark, which has no life and is very durable, often transparent. It greatly resembles the scarf-skin of animals. Very distinct on elder, currant and birch; on one species of birch it resembles paper.

Cya'neus. Blue.

Cyathifor'mis. Wineglass-form. Cylindric widening gradually upwards, margin not revolute.

CYLIN'DRIC. A cylindrical shaft, of nearly equal diameter throughout its whole extent.

Cymbifor'mis. See boat-form.

CYME, *cy'ma.* Flowers umbel-like in their general external appearance. It agrees with an umbel in having its common stalks spring from one centre; but differs in having those stalks variously and alternately subdivided; as the elder, *(sambucus.)* Smith.

Cymo'sus, CYMO'SE. Being in cymes.

Cyphel'læ. See pits.

D.

Dædal'eus. The end broad, waving and torn. Neatly formed.

DAGGER-POINTED. See cuspidate.

De'bilis. Weak, feeble, lax.

DEBRIS. Ruined rocks. The broken fragments of coarsely disintegrated rocks.

DECAGYN'IA. (*Deka,* ten; *gune,* female.) See p. 13.

DECANDROUS. Plants having ten stamens in each flower.

Dechaphyl'lus. Ten-leaved.

Decem'fidus. Cut into ten parts, or 10-cleft.

Decemlocula're. Ten-celled.

DECID'UOUS. Falling off in the usual season for similar parts to fall; as leaves falling at the decline of the year; corols falling off at the time the stamens fall, &c. See caducous and permanent.

DECIDENS. Terminating.

DECLI'NATE, DECLI'NED, *declina'tus.* Curved downwards archwise.

DECOMPOSITION. Separating the chemical elements of bodies. It differs from disintegration, which subdivides without decomposition.

DECOMPOUN'D, *Decomposi'tus.*—Doubly-compound. When a compound, or divided, petiole has a compound leaf on each part, the whole is a decompound leaf. The same with umbels, &c. See supra-decompositus.

Decortica'bilis. Easily peeled.

DECUM'BENT, *decum'bens.* When the base is erect, and the re-

mainder is procumbent. It applies to stems, stamens, &c.

DECUR'RENT. When the two edges of a leaf extend downwards below the points of insertion and become projecting wings to the stem. The gills of *agarics* are decurrent, when they run down the stipe in a single ridge.

Decursi've. Decurrently.

DECUR'SIVELY PIN'NATE. When the leafets of a pinnate leaf run along the petiole with their extended bases.

DECUS'SATE, *decussa'tus.* When leaves or branches are opposite in pairs, and each pair stands at right angles with the next pair above or below on the same stem.

DEFLEC'TED, *deflex'us.* Bending down archwise.

Deflora'tus. Having discharged the pollen.

DEFOLIA'TION, *defolia'tio.* The shedding of leaves in the proper season.

Defolia'tio no'tha. The shedding of leaves before the proper time, on account of injuries received.

DEHIS'CENT, *dehiscen'tia.* The natural opening of capsules in the proper season.

Deliq'uium. See debilis. Weak, watery.

DEL'TOID, *deltoi'deus.* A leaf with four corners; that is, one at the stem, one at the apex, and one each side; but the side ones are nearer to the base than to the apex. When the side angles are about as near to the apex as to the base, it is called a *rhombold* leaf. Both kinds are called *diamond-form* in English. Willdenow considers a deltoid leaf as a thick 3-sided leaf, a transverse section of which he supposes intended, as giving the deltoid form.

Demur'sus. See submersed. Under water.

DENSE, *den'sus.* Close, compact. A panicle with abundance of flowers very close is dense. See thyrse.

DEN'TATE, *denta'tus.* Toothed.

—— *leaf.* (This term is of such almost unlimited extent, it is best defined negatively.) Projections from the margin of a leaf, which are of its own substance; and not serratures, nor crenatures.

—— *root.* That kind of granulated root, which resembles teeth strung together.

DENTIC'ULATE. Having very small teeth.

DEN'TOID. Remotely resembling teeth, or having processes somewhat of that form.

DEN'TURE. A tooth.

DENU'DATE. Plants whose flowers appear before the leaves, consequently have a naked appearance. Naked.

Deor'sum. Downwards.

Depaupera'tus. Few-flowered.

Depen'dens. Hanging down.

DEPRES'SED. When the upper surface of a succulent leaf is a little concave. It applies to seeds also with flat tops.

Descen'dens. The entering of a root into the ground. The direction is *vertical*, as the beet; *horizontal*, as the mint; *oblique*, as the branching roots of most trees.

DESCRIP'TIONS of plants. In writing a complete description of a plant, begin with the fructification, and describe; 1. Calyx. 2. Corol. 3. Stamens. 4. Pistil. 5. Pericarp. 6. Seed. 7. Receptacle. Then go through with the root and herbage, thus: 1. Root. 2. Stem and Branches. 3. Buds, including the Foliation. 4. Leaves. 5. The Appendages. 6. Inflorescence.

Then add the general appearance and size of the plant, and

what well known plant it most resembles. Give an account of the soil and situation where it grew; whether high or low, wet or dry; the precise time of flowering; colour of all parts; whether annual, biennial or perennial. Then close with the name of the town, county, &c. and what quantity of the same kind of plant is to be found there; and what name the common people call it by, if any. Accompany this description with several specimens, so selected as to exhibit the plant in all its parts.

There can be no better exercise for students, than to write several such descriptions every day. See Diagnosis.

Desicca'tio. Dryness.

Desi'nens. Terminating.

DETRITUS. That part of the surface of the earth, which is neither rock nor recently decomposed animal or vegetable matter. Ground or worn-down rocks in the state of soil.

Dextror'sum. Twining from left to right; that is, with the apparent motion of the sun; as the hop-vine.

DIADEL'PHIA. (*Dis*, twice; *adelphos*, brother.) See p. 14.

DIADEL'PHOUS. Belonging to, or varying into, the class diadelphia.

Diagno'sis. A short description containing only what is essential. Linneus made it his rule, never to let a specific description exceed twelve Latin words. Willdenow says more must be added if necessary. It should extend no farther than to express the difference between that and the other species.

DI'AMOND-FORM. See Deltoid.

DIAN'DRIA. (*Dis*, twice; *aner*, male.) See p. 12.

DIAPH'ANOUS. Admitting the transmission of light obscurely. Translucent.

DICHOT'OMOUS. Forked. Stem, &c. parted in pairs, each branch parted in pairs again, and so on. When it is parted but once it is more properly called forked, *furcatus.*

DICLIN'IA. (*Dis*, twice; *kline*, bed,) stamens in one flower and pistils in another, whether on the same or on different plants. This is the name of a class in Pursh's Flora, comprising most of the plants of the classes Monœcia and Diœcia.

This class Pursh divides into three orders. 1. *Segregatæ*, which includes plants, whose flowers are monœcious or diœcious; but are not in aments or strobiles. 2. *Amentaceæ*, which includes plants, whose flowers are in aments and not in strobiles. 3. *Coniferæ*, which includes plants, whose flowers are in strobiles.

DICLINIOUS. (*Dis*, two; *kline*, bed.) Plants, whose stamens and pistils are in different flowers, whether on the same plant, or on different plants.

DICOC'COUS. Two-grained. Consisting of cohering grains, or cells with one seed in each.

DICOTYLED'ONOUS. Plants with two cotyledons. See Cotyledon.

DID'YMOUS, *di'dyma.* Twinned, as some anthers.

DIDYNAM'IA. (*Dis*, twice; *dunamis*, power.) See p. 13.

DIDYN'AMOUS. Belonging to, or varying into, the class Didynamia.

Diffor'mis. Applied to a monopetalous corol, whose tube widens above gradually, and is divided into irregular or unequal parts. Willdenow. It is also applied to any distorted parts of a plant.

DIFFRACTED. Twice bent. Antennæ are diffracted, when bent outwardly, then forward, at short turns.

DIFFU'SED, *diffu'sus.* Spreading.

Expanded in an open loose manner.

DIG'ITATE. Fingered. When the base of several leafets rest on the end of one petiole ; as the strawberry and fivefinger.

DIGYN'IA. (*Dis*, twice, *gune*, female.) See p. 16.

Dilata'tus. Expanded, widened.

Dilu'te. Prefixed to a colour implies, that it is reduced ; as dilute-purpureus, pale purple.

Dimidia'tus. See halved.

DIŒ'CIA. (*Dis*, twice ; *oikos*, house.) See p. 15.

DIŒ'CIOUS, *dioi'ca.* Belonging to, or varying into, the class *diœcia.*

DIPET'ALOUS. Having two petals.

DIPHYL'LOUS. Having two leaves.

DIPTERYG'IA. See wings. Winged seeds.

DIS'COID. Resembling a disk. A tuft of leaves spread out so as to resemble a disk. Having a disk without rays. Such compound flowers as are wholly made up of tubular florets ; that is, though they may have marginal florets differing from those in the disk in the essential organs, yet the corols will be all tubular, and not capitate.

DISINTEGRATION. The process of destroying the integral character of a body. Applied to geology it signifies, the process of crumbling down a rock, or reducing it to grains, pebbles or soil, by the two disintegrating agents, the variations of temperature and moisture.

DISK, *dis'cus.* The whole surface of a leaf, or of the top of a compound flower, as opposed to its edge or periphery. This term is also applied to the aggregate florets of an umbel, and to the broad or thickened top of a receptacle. It is applied to the outer surface of each valve of a shell.

Disper'mus. Containing but two seeds.

Dissec'tus. Gashed in deeply.

DISSEP'IMENT, *Dissepimen'tum.* See partition.

Dissil'iens. A pericarp is dissilient, when it bursts open with a spring ; as the touch-me-not, (impatiens.)

Dis'tans. Standing off remotely.

DIS'TICHALLY. See distichus. This is a very odd adverb introduced by Nuttall.

Di'stichus. (*Dis*, twice ; *stichos*, row.) Two ranked. When branches, leaves, or flowers are arranged along opposite sides of the stem or spike, so as to point two opposite ways ; as the leaves of the hemlock tree, (pinus canadensis.)

DISTINC'T, *distinc'tus.* Separate, opposed to connate or confluent.

DIVAR'ICATE, *divarica'tus.* Branches spreading out from the stem so far, as to form more than a right angle with it above.

DIVER'GING, *Diver'gens.* Branches spreading out from the stem so far, as to form almost a right angle with it.

Diur'nus. Enduring but a day.

DIVI'DED, *divi'sus.* Severed into parts.

DODECAN'DRIA. (*Dodeka*, twelve ; *aner*, male.) See Rejected Classes.

DODECAN'DROUS. Belonging to, or varying into, the class *dodecandria.*

Dodecaphyl'lus. Having twelve leafets.

Do'drans. Longspan. Distance between the ends of the thumb and little finger, both being extended.

Dolabrifor'me. See axe-form.

DOR'SAL, *dorsa'lis.* Fixed to the back. Back fins. Awns are dorsal, when proceeding from the outside of a glume and not from the tip.

DORSIF'EROUS. Bearing the fruit on the back ; as ferns.

DOT'TED. Besprinkled with dots. See punctate and perforated.

Doub'le. Two in the place where most plants have but one ; as the double calyx of the hollyhock, (althea.)

Doub'le-flow'ered. See full-flowered.

Doub'ly. See duplicate. In English it has its common appropriate meaning ; as doubly-crenate, when the crenatures are crenated, &c.

Doub'ly-pin'nate. See bipinnate.

Down or down'y. See tomentose.

Droop'ing. See cernuus.

Drupe, *drup'a*. That kind of pericarp which consists of a thick, fleshy, succulent, or cartilaginous coat, enclosing a nut or stone. It is *berry-like* (baccata) as in the cherry, or *dry* (exsucca) as in the walnut *(juglans.)*

Drupa'ceous. Bearing drupes, or fruit resembling them.

Druses. Any cavities in minerals, which are lined with crystals.

Dub'ius. Doubtful.

Dul'cis. Sweet.

Dumo'sus. Bushy, or resembling bushes.

Duodecem'fidus. Cleft in 12 divisions.

Du'plex. Double.

Duplica'to. Doubly. This term is often prefixed to others, in all which cases it simply means doubly. As duplico-ternatum, doubly-ternate or biternate.

Duplica'tus. Doubled.

Dura'tion. See ages.

Dynamous. Applied to plants whose flowers contain two, or four, stamens, longer than two others in the same flower.

E.

Ear'ed. This term applies ; 1st, to the round extended, or appendaged lobes of a heart-form leaf: 2d, to the side lobes near the base of some leaves : and 3d, to twisted parts, in some ferns and some liverworts, which are supposed to resemble the conchus, or passage into the ear. Applied to shells, it means the flat processes near the hinge in bivalves ; as the pecten (scollop.)

Ebractea'tus. Without bracts.

Ebur'neus. Ivory white ; as the whole plant *monotropa*, called beechdrops, or birdsnest.

Ecalcara'tus. Without a spur.

Echi'nate, *echina'tus.* Hedgehog-like. Beset with erect prickles.

Ecos'tate. Nerveless or ribless.

Efflores'cence. The powdery substance on some Lichens, composed of minute deciduous globules.

Efflorescen'tia. Flowering season of different sorts of plants. More simple flowers come out in June than in any other month, in North America. Very few compound flowers appear before August.

Effolia'tion. Unnatural falling of leaves by means of improper culture, worms, &c.

Effuse. Open, or having an opening, so that seeds, liquids, &c. may be poured out.

Egg'-form. See ovate.

Eglandulo'sus. Glandless.

Egret. See aigrette.

Elas'tic. See dissiliens. Springing.

Elip'tic. Longer than wide, rounded at or near both ends, and nearly equal in breadth towards both base and apex.

Elon'gated. Lengthened out, as if extended beyond what is usual in similar parts.

Elytra. The outer, or upper, shelly wings of some order of insects.

Emar'cidus. See withering.

Emar'ginate. Notched in the end at the termination of the midrib. See Retuse.

EMBRA'CING. See clasping.
EM'BRYON. See hilum. Eye of a bear, &c.
EMERSED. Out of water.
EMPA'LEMENT. See calyx.
END'-BITTEN. See præmorsus.
ENER'VATE. Nerveless.
ENNEAN'DRIA. (*Ennea*, nine; *aner*, male.) See p. 13.
ENNEAN'DROUS. Belonging to, or varying into, the class *enneandria*.
Enneapet'alus. Nine-petalled.
Eno'dis, ENO'DE. Knotless. Having no joints; as the bulrush.
EN'SATE, *ensa'tus.* Having sword-form leaves.
EN'SIFORM. Sword-form. Two-edged, tapering from base to apex mostly, and a little arching towards one edge; as flag and cat-tail, (Iris and Typha.)
ENTI'RE. Continued without interruption. A margin of a leaf, calyx, corol, &c. is entire, when it is neither serrate, toothed, notched, nor in any manner indented.
ENTOMOLOGY. The science of insects. It embraces the whole articulated division, excepting Annelida.
Ephe'merus. Of very short duration.
Epicar'peus. On the germ. See superior.
Epider'mis. See cuticle.
Epiphrag'ma. A thin membrane stretched over the mouth of the moss, *polytrichum*.
E'QUAL. Similar parts equal among themselves. The calyx, corol, &c. are equal, when the leafets, petals, or subdivisions, are similar in form, size and direction. Opposed to unequal.
EQUINOC'TIAL FLOW'ERS. Opening at stated hours each day.
EQ'UITANT. Opposite leaves embracing each other, so that they alternately enclose each other's edges; as the leaves near the roots of the Iris and yellow garden lilies, (hemerocallis;) also the position of the leaves in some unopened buds.
EREC'T, *erec'tus.* Upright. Not so perfectly strait and unbending as strictus. When applied to any thing laterally attached to the stem, as leaves, &c. it implies that it makes a very acute angle with it.
Erectius'culus. Erectish.
ER'GOT. See spurred rye.
Erina'ceous. Hedge-hog-like.—See *echinatus*.
ERO'SE, *ero'sus.* Gnawed. Unequally sinuated, as if the sinuses had been eaten by insects.
ES'CULENT. Eatable.
ESCUTCHEON. A plate between the bases of wings of insects.
ESSEN'TIAL character. See diagnosis.
ESSEN'TIALS. The stamens and pistils.
EV'ERGREENS. Such plants as retain their leaves throughout the year; as white pine, laurel, &c.
EV'ERGREEN. Verdant throughout the year.
EXAN'NULATE. Ferns whose capsules are without rings. This comprises one section of ferns. Those which have an apparent vestige of, but not in reality, a ring, form another section. Those with a ring, another. See annulatus.
Exara'tus. See sulcate.
Exaspera'tus. See roughened.
Excava'tus. Hollowed out.
EXOT'IC, *exot'icus.* Plants not growing spontaneously in a wild state in that particular country, or section of a country.
EXPAN'DED, *expan'sus.* Spread.
EXPANSILE. Capable of being spread.
Explana'tus. Unfolded. Spread out flat.
EXSERT', *exser'tus.* Standing out. Stamens are exsert when protruded out of the corols. Peduncles of spikes in culmiferous

plants are exsert, when protruded out of the sheaths; as carex folliculata and pubescens. Teeth may be exsert.

EXSTIP'ULATE. Without stipules.

Exsic'cus. Juiceless.

Ex'timus. At the very top, or extreme end.

EXTRAFOLIA'CEOUS. Outside of the leaf. A stipule is extrafoliaceous when it comes out a little lower than the leaf.

Extrors'um. Outwardly.

EYE. See hilum.

F.

Faci'es. The general external appearance of a plant.

FACTITIOUS. Produced by art; not natural.

FACTIT'IOUS character. A character, where the number of parts or some other circumstance, not of essential importance, are taken into it. It admits of fewer or more characteristic marks, than are absolutely necessary.

FAL'CATE. See acinaciform.

FAM'ILIES. See gentes.

FAN'FORM. Spread out, or tapering towards the base like a fan.

Farc'tus. Stuffed, full. It is opposed to fistulous, hollow.

Fari'na. See pollen. Meal, flour.

Farino'sus. Mealy, powdery.

Fasci'atus. Having parallel bands, or coloured stripes.

FAS'CICLE, *fascic'ulus.* A bundle. Flowers level-topped, umbel-like in the general external appearance, with footstalks irregular in their origin and subdivision. The fascicle differs but little from the corymb, excepting in having shorter footstalks, which do not extend so far down the main stem. Sweet-william (dianthus) is a good example.

A bundle of tuberous roots is called a fascicle; as the asparagus root. Also a bundle of leaves; as of the white pine.

FASCIC'ULATE. An unnatural bundle of branchlets.

FASTIG'IATE, *fastigia'tus.* Level-topped. Applied to aggregate flowers, which are elevated to an equal height or nearly so; forming a level, convex or concave top, differing but little from a plane. It is also applied to leaves; as the hog-weed (ambrosia artemisifolia.)

Favo'sus. See alveolate. Resembling honey-comb.

Faux. Jaws. The throat or opening into a corol. That precise spot, where the tubular part of a ringent corol begins to separate or expand into lips or mouth, is the faux.

FEAT'HER. See Aigrette. The plumose crown of seeds.

FE'MALE, *femin'eus.* See pistillate.

FENCE. Involucre of Withering.

FEN'CED. Walled around, as the stamens are by the scales in brookweed (samolus.)

Fe're. Almost.

FERNS. See filices.

FERRIFEROUS. Containing iron.

FERR'UGINOUS, *ferrugin'eus.* The colour of iron-rust. Applied to masses of minute quartz crystals.

FER'TILE. See pistillate.

FERTILIZA'TION. The application of the pollen, which is formed in the cells of anthers, to the stigma; which is essential to the production of perfect seed. See chorion. Richard is too lengthy upon this subject for the plan of this Dictionary; which is intended for definitions and illustrations, but not for physiological discussions.

FETTERED. Having entangling feathers on or near the legs.

FI'BRE, *fi'bra.* Any thread-form part. The small flexible thread-form roots of grasses and many other plants, are called fibres.

FI'BROUS. Composed of fibres.

FID'DLE-FORM. See panduriformis.

Figu'ra. See Icones. Figures, drawings.

Figura'tum. This term is applied to the mouth of the capsule of a moss, when it is set round with membranaceous teeth.

FIL'AMENT, *filamen'tum.* That part of the stamen which is between and connects together the anther and the receptacle, calyx or pistil. When the filament is wanting, the anther is sessile. In monopetalous corols, the filaments are generally inserted into, or are attached to, their bases.

FILI'CES, FERNS. See p. 18.

FIL'IFORM. Thread-like. Of nearly equal thickness throughout, round and cylindric. It is applied to spikes which are very long in proportion to their diameters. But it is generally confined to smaller parts.

Fimbria'tus. Fringed. Differs from ciliate in being less regular and of coarser parts.

Fimeta'rius. Growing naturally on manure heaps.

FIN'GERED. See digitate.

FISSILE. Easily split in the direction of the laminae.

FIS'SURE. A cleft or slitted apperture.

Fis'sus. See cleft.

FIS'TULOUS. Hollow like a pipe, flute or reed.

FLAB'ELIFORM. See fan-form.

FLAC'ID, *flac'cidus.* Too lax or limber to support its own weight. See lax.

Flagel'lum. See runner.

Flagellifor'mis. Resembling a whip-lash.

Flam'meus. Flame-coloured.

FLAT. See planus.

Fla'vus. Yellow.

FLESH'Y. Thick and filled with pulp within.

FLEX'IBLE, *flex'ilis.* Easily bent.

FLEXU'OSE. Bending and frequently changing direction. A stem is flexuose, or zigzag, which uniformly bends at regular intervals; as from joint to joint, branch to branch, leaf to leaf, &c.

Flex'us. Bent. This relates to but one bending. See geniculate.

FLO'ATING. See natant.

FLOCCO'SE. Woolly, or resembling the flocks sheared from cloth.

FLO'RAL. Relating to a flower.

—— *bud.* Containing an unopened flower.

—— *leaf.* See bract.

Florescen'tia. See efflorescentia.

FLO'RET. Little flower. Whether the flower is large or small, it is a floret, if it is one of a number all of which constitute an aggregate or compound. As the little flowers which make up the head of a thistle, a head of wheat, the umbel of a carrot, &c.

Floribun'dus. Abounding in flowers.

FLORIF'EROUS. Bearing flowers. A leaf is floriferous when a flower grows out of its disk or margin.

FLO'RIST. One whose employment is that of creating monsters; that is, double and various coloured corols; as carnations, double roses, &c. These meet a more ready sale than the most interesting plants in their native state, among persons of a coarse unscientific taste. Such persons, to be consistent, should prefer the high colouring daubings of a sign painter, to the delicate touches of a Savage, a Trumbull or a Vanderlin.

Flos. See flower.

FLOS'CULAR, *flosculo'sus.* See tubulous.

Floscu'lus. Tubular floret. Nuttall applies it to the florets of grasses; but ought not to be followed.

FLOW'ER. The stamens and pistils with their covering. These two organs, or rather their anthers and stigmas, are essential to all plants. But the calyx, corol, and even nectaries when present, are parts of the flower.

FLOW'ERING SE'ASON. See efflorescentia.

FLOW'ER-STALK. See peduncle.

Fluvia'tilis. Growing naturally in rivers and brooks.

Fœ'tidus. Smelling disagreeably.

FOLD. Annexed to numerals denoting so often combined; as 5-fold leaves, growing in fives, &c.

FOLIA'CEOUS. See leafy.

FOLIA'RIS. A tendril on a leaf.

—— *gemma.* A bud containing leaves only.

FOLIA'TION, *folia'tio.* The manner in which unopened leaves are situated within the bud. The modes of foliation are: 1. Involute. 2. Revolute. 3. Obvolute. 4. Convolute. 5. Imbricate. 6. Equitant. 7. Conduplicate. 8. Plaited. 9. Reclinate. 10. Circinal. See each in its proper place.

Folia'tus. Leafy.

Folif'erous. Particularly adapted to bearing leaves.

FOL'ICLE, *foli'olum.* See leafet. One of a compound leaf.

Folio'sus. See leafy.

Fol'ium. See leaf.

FOL'LICLE, *Folicu'lus.* A pericarp with one valve, which opens lengthwise on one side only; as milk-weed (asclepias.)

Fontina'lis. Growing naturally about springs.

FOOT'STALK. See *peduncle* and *petiole*, it is put for both.

FORA'MEN. A hole.

Foraminulo'sus. Pierced with many small holes.

FORK'ED. See dichotomous.

FORMATION. A term used by geologists to express more or less than a definite stratum; as detritus is called alluvial formation, iron formation may apply to the ferriferous rocks and their iron contents.

Fornica'tus. Arched. See vaulted.

Fov'ea. A nectariferous cavity for the reception of honey. Honey-comb like.

Fovil'la. The fine substance contained in the particles of pollen. When the ripe pollen comes in contact with the moist stigma, it explodes and discharges the fovilla.

Frag'ilis. Breaking easily and not bending.

FREE. See libera.

Freq'uens. Very common, or frequent.

Fri'gidus. Growing naturally in cold countries.

FRIN'GED. See fimbriatus.

FROND. An herbaceous, a leathery, a crustaceous, or gelatinous leaf, or somewhat of a leaf-like substance, from which or within which the fruit is produced. It is applied exclusively to the class cryptogamia—Smith. But formerly it was also applied to *palms.*

Frondescen'tia. See leafing.

FRONDO'SE, *Frondo'sus.* Leafy, or leaf-like. It is applied to *mosses* to distinguish them from *liverworts* by Willdenow; who retains them in the same order.

Frons. See frond.

FRONTLETT. The part back of the base of a bird's bill. Generally bristly.

Frutescen'tia. Applied to palms and such others as have a simple stem, and leaves only at top. Willdenow.

It is applied by Martyn to the time when vegetables scatter their ripe seeds.

FRUCTIF'EROUS. Bearing, or becoming, fruit.

FRUCTIFICA'TION, *Fructifica'tio.*—"The temporary part of vegetables, which is destined for the

reproductions of the species, terminating the old individual and beginning the new."—Linneus. It consists of seven parts—1. Calyx. 2. Corol. 3. Stamen. 4. Pistil. 5. Pericarp. 6. Seed. 7. Receptacle. See each in its proper place.

FRUIT, *fruc'tus*. The seed with its enclosing pericarp. If the seed grows naked, the seed alone is the fruit; as of the sage.

FRUIT'-DOTS. Assemblages of capsules on the backs of ferns. Also small assemblages of powdery bodies on the fronds of lichens, called *soredia*.

FRUIT'-STALK. See peduncle.

FRUSTRA'NEA. (*Frustra*, in vain,) *polygamia*. See p. 18.

FRUTES'CENT, *frutes'cens*. Woody, or from herbaceous becoming woody.

Frut'ex. A shrub, which see.

Frutico'sus. See shrubby.

Fug'ax. Fugacious. Soon disappearing. Flying off. See ring.

Fulcra'tus. Having appendages.

Ful'crum. These are seven—1. Stipule. 2. Bract. 3. Thorn. 4. Prickle. 5. Sting. 6. Gland. 7. Tendril. See each in its proper place.

FULIGINEUS. Sooty, dark dull colour.

FULL-FLOWERED. When the petals of the corol are so multiplied as to exclude the stamens; which is effected by the stamens becoming petals; as the peony, rose, &c. This rarely takes place in monopetalous corols. Double flowers are totally unfit subjects for botanical exercises. See florist.

FUL'VOUS, *Ful'vus*. Yellowish rust-colour.

FUN'GI, funguses. They are now known to be organized bodies, propagating their kind by seeds, like other vegetables. However unsightly a common toadstool, the mould on old scraps of leather in damp places, or the blight in grain, may appear to the careless observer; they are all beautifully organized, and highly interesting to the student in Natural History. But "their sequestered and obscure habitation, their short duration, their mutability of form and substance, render them indeed more difficult of investigation than common plants."—Smith. See p. 19 & 25.

FUNGO'SE. Fleshy and spongy.

Fun'gus. This term is sometimes put for pileus.

FU'NICULE, *Funic'ulus umbilica'lis*. The thread by which a seed is fastened at the hilum.

FUN'NEL-FORM. A corol with a tubular base, and a border opening gradually into the form of a reversed cone.

Furca'tus. See dichotomous.

FURFURACEUS. Bran-like.

FUR'ROWED. See sulcate.

Fus'cus. Sooty-yellow, dark-yellow.

FU'SIFORM, *fusifor'mis*. Spindle-form. A root thick at the top and tapering downward to the point is fusiform; as the beet and carrot. A worm, larva, shell, &c. may be fusiform.

G.

Gal'ea. See labiate. A helmet.

GA'LEATE, *Galea'tus*. Resembling a helmet.

GALLS, *Gal'læ*. Excresences produced by the stings of insects. The balls found on oaks which are used in dyeing, the common large green oak-balls, the singular green lumps found on the wild honey-suckle, &c. are examples. The irritation upon the delicate sap-vessels, produced by the sting and egg of the insect, causes a greater flow of sap in that direction. This

pressure of sap distends and distorts the capillary tubes and membranes, until those excrescences are formed around the egg. In due time the egg becomes a larva, or maggot, which after feeding a while upon the gall, changes into the pupa, or chrysalis, and at last escapes a perfect insect, or fly. Each fly produces a gall of a peculiar form.—Willdenow.

GANGUE. The part of a rock which lines a vein and embraces a mineral, and is unlike the rest of the rock.

GAPE. The opening between two lips of a labiate, or irregular, corol. Applied to mouths of birds.

GAP'ING. See hians.

GAS'HED. See incisus.

Gem'inus. See double. It is also used for paired, in pairs or twins.

Gem'ma. See bud.

Gemma'tio. Budding. The gemmation of plants comprehends the developement of a new plant from the bud, as well as the foliation; according to Richard. See foliation. Buds are of four kinds. 1. *Bud*, properly so called, which see. 2. *Turion*, the radical bud, or tender shoot which rises from the root in the spring, before it expands its leaves; as the early asparagus shoots. 3. *Bulb*, which see. 4. *Propago*, a longish round body proceeding from the mother plant in mosses, which itself becomes a new plant. This is placed among the buds by Richard; but Linneus calls it the seed; and Gærtner applies it to the seed of *lichens* also.

GEMMIP'AROUS. Producing buds in the axils of leaves.

GEN'ERAL. See partial.

GEN'ERAL FENCE. Universal involucre.

GENER'IC CHAR'ACTER. The definition of a genus. It is confined entirely to the flower and fruit. It is *essential*, *factitious*, or *natural*; which see.

GENER'IC NAME. The name of a genus. Milne enumerates 21 rules respecting the naming of *genera*; which with his examples, occupy 40 pages. The principal names are founded upon some supposed virtues of plants, expressed in Latin or Greek——the habit, place of growth, &c. expressed in the same manner—given in honour of some distinguished botanist—or borrowed from the fables of poets.

It seems to be an established modern rule, that no *genus* shall have the name of a politican, or of any other character however distinguished, unless liberal patronage, or skill in the science of botany, will warrant it.

GENIC'ULATE. Kneed. Forming a very obtuse angle, like a moderate bending of the knee.

Gen'tes. Nations. Linneus divided plants into nine great natural tribes or casts. 1. PALMS (palmæ;) as the date and cocoa-nut. 2. GRASSES (gramina;) as wheat, Indian-corn, sugar-cane, rice, timothy-grass, &c. 3. LILIES (lilia;) as lily, tulip, daffodil, &c. 4. HERBS (herbæ;) as thistles, nettles, peas, mint, potatoes, hemp, plantain, beets, and all other herbaceous plants except the above. 5. TREES (arbores;) as oak, chesnut, pine, willow, dogwood, currants, lilac, whortleberry, cranberry, and all other plants with a woody stem. 6. FERNS (filices;) as brake, polypod, maidenhair, ground pine, and all other plants of this order, which see. 7. MOSSES (musci.) See the order 8. ALGÆ. This tribe includes the plants of the orders, *hepaticæ*, *algæ* and *lichenes*, which see. 9. FUNGI. As mushroom, toad-

stool, puff-ball, mould, blight, &c.

GE'NUS, (plural *gen'era*,) A number of plants which agree with one another in the structure of the flower and fruit.—Willdenow. The *classes* are divided into *orders*, and then the orders are divided into *genera*, the genera into species. This is the *analytic* method. The species are united into their respective *genera* by rejecting the specific distinctions; genera are united into their respective *orders*, by rejecting the generic distinctions; orders are united under their respective *classes* by rejecting the taxinal character. This is the synthetic method. Thus it will be readily perceived, that scientific botany is practical logic.

Plants of the same genus possess similar medical powers, though in very different degrees.—Milne. This rule is certainly liable to some exceptions.

GEODE. A cavity in a mineral whose sides within are more or less spherical. It may be empty, or may contain minerals different from the mineral containing the geode.

GERM, *germen*. That part of the pistil, which, after the pollen is received, soon contains the rudiment of one young plant, or more. Its whole substance becomes the pericarp and seed, as it enlarges itself.

When the calyx comes out below the germ, the germ is *superior*, and the calyx *inferior*; when the calyx comes out of the upper part of the germ, the germ is *inferior*, and the calyx *superior*.

The *mirabilis* and *sanguisorba*, have the germ between the calyx and corol. But Smith says, the corol can be traced to the base of the germ in the *sanguisorba*; and the *mirabilis* (called the four-o-clock) may be treated in the same manner. It is therefore very doubtful, whether there is a plant, whose germ is between the calyx and corol.

GER'MINATE. Appertaining to the germ.

GERMINA'TION. The swelling of a seed, and the unfolding of its embryo.

GIB'BOUS. Bunched out. When one or both sides are swelled out.

GIL-COVERS. The bony or cartilaginous covering placed over, or outside of the gill-membranes.

GILL-MEMBRANES. The membranes immediately covering the gills.

GILLS. See lamella. Lungs of fish.

Gil'vus. Iron-grey, and brick-colour.

Glabel'lus. Bald. Without hairs.

GLA'BROUS, *glab'er*. Sleek. Having no pubescence. Glaber is often translated smooth, which in most cases conveys a correct idea; or at least does not lead to error. But a leaf with soft cottony pubescence is smooth, though it is not glabrous.

Gladia'tus. A sword-form legume is sometimes called gladiate. See ensiform.

GLAND, *glan'dula*. A round, or roundish appendage which serves for transpiration and secretion. They are situated on leaves, stems, calyxes, and particularly at the base of stamens in some cruciform flowers; as mustard. Glandular hairs, or hairs with glandular heads, are very abundant on the common hazlenut calyx, of North America, (corylus americana.)

GLAN'DULAR, GLAN'DULOUS, *glandulosus*. Having glands.

GLANDULIF'EROUS. Bearing glands.

GLASS'-FORM. See cyathiform.

GLAS'SY. See hyaline.

GLAU'COUS. Clothed with a sea-green mealiness, which is easily rubbed off. It is sometimes put for a greenish-grey colour. This colour, *ferruginous* and *hoary*, are so constant, that they are used in specific descriptions. All other colours are excluded on account of their being too variable to be relied on.

GLOBO'SE, *Globo'sus.* Spherical, round on all sides like a ball. This term is often applied in cases where the part is rather roundish than perfectly globular.

GLOB'ULES. That kind of receptacle of lichens, which is globose, solid and crustaceous, formed of the substance of the frond, and terminating its points or branches; from whence they fall off entire, leaving a pit or cavity. They are supposed to be covered all over with a coloured seed-bearing membrane. Smith.

Glob'uli. Globules.

Glo'chis. See barb.

GLOME. A roundish head of flowers.

GLOM'ERATE, *glomera'tus.* When many branchlets are terminated by little heads.—Richard. A spike is glomerate when it consists of a collection of spherical heads.—Willdenow.

GLOM'ERULE, *glomer'ulus.* The small heads constituting a glome, or a small glome.

GLUMA'CEOUS. Glume-like, or bearing glumes.

GLUME, *glu'ma.* Consists of the scales of chaffs which surround or enclose the stamens and pistils in the flowers of grasses. The lower ones are called the calyx, all others the corol.

Each scale, chaff, or husk, is called a valve; which gives the names *bivalve*, with 2 husks or chaffs; *univalve*, with one, &c.

When several flowers are arranged along a rachis in a spikelet with a valve or two, or more, below the lowest flower, these are called the common or general calyx (gluma communis;) and the glume to each floret on the spikelet above is called partial (gluma partialis.)

Richard says, glumes ought to be called bracts; as they are not properly either calyx or corol.

GLUMO'SE. Having glumes.

GLU'TINOUS. Having on some part more or less of adhesive moisture.

GNAW'ED. See erose.

GONGYLOUS, *Gon'gulous.* A knot. It is applied to a round, hard body, which falls off upon the death of the mother plant or animal, and becomes a new one; as in the *fucus* and some radiated animals.

GONOP'TERIDES. Angle-fruit fern. one of the new orders of ferns. It is adopted by Pursh, Torrey and a few other writers on American botany. The receptacles of the fruit are polygons; as of the genus Equisetum.

GRAM'INA. The family of grasses. See gentes. But in a limited sense, the sedges, rush-grasses, &c. are not included. See Natural Orders. Culmiferous is the most extensive term; and most of this vast family have three stamens in each flower, though many of them are monœcious. The rice, star-grass and rush-grass have six stamens to the flower.

Graminifol'ius. Having leaves resembling those of grasses.

Grandiflo'rus. Having large flowers.

Granif'erus. Bearing grains or kernels; as those on the valves of dock-flowers.

GRAN'ULATE, *granula'tus.* In the

form of grains. A granulate root consists of several little knobs strung together along the side of a filiform radicle. It differs from the knobbed tuberous roots in this ; that the latter are strung together by rootlets, which proceed from near the middle of one knob to another.

GRANULA'TIONS. Grain-like substances.

Grave'olens. Having a strong odour or scent.

GREGARIOUS. In flocks. Applied to fungi and other plants growing together in groups ; but not so as to be cæspitose, or to form a turfy mass.

GRESSORAL. Birds' feet, which are formed for running ; having three toes forward and one back, and the two outer toes mostly joined towards the base.

GROOV'ED. See sulcate.

GROSSIFICA'TION. The enlarging of the fruit after the florescence.

GUITAR'-FORM, See panduriformis.

Gymnocar'pi fun'gi. Such as bear seeds in a naked *hymenium*, which see.

Gymnosper'mus. (*Gumnos*, naked ; *sperma*, seed.) With seeds naked, or growing without pericarps.

GYNANDROUS. (*Gune*, woman ; *aner*, man.) Applied when stamens grow on pistils, but not in immediate connexion with the calyx or corol.

H.

Habia'tio. The native residence of plants ; or the situation wherein they grow most naturally.

HAB'IT, *hab'itus.* The external appearance of a plant by a general view of which we know it without attending to any of its essential characters.

A knowledge of the habits of plants is to be acquired ; by first seeing them in a growing state, and then by repeatedly reviewing them in an HERBARIUM, which see.

HAIR. See pilus.

HAIR'-LIKE. See capillary.

HAIR'Y. See pilose.

HAL'BERT-FORM. See hastate.

HALTERS. Globules on slender stems under the wings of some two-winged insects, called poisers.

HALV'ED. One-sided, as if one half had been taken off ; as the halved spathe of some Indian-turnips, one-sided involucres, &c.

Ha'mus. A hook, as the hooked spines on burdock.

Hamo'sus. Hooked.

Hamulo'sus. With very small hooks.

HAND'-FORM. See palmate.

HANG'ING. See pendent.

HAS'TATE. Halbert-form, or shaped like an espontoon. A leaf with processes near the base from each edge, which are acutish ; as common sorrel leaves. When these processes point considerably backwards the leaf is sagittate.

HATCH'ET-FORM. See axe-form.

HEAD. Flowers heaped together in a roundish form with no peduncles or very short ones ; as clover-heads. This term is applied to a globular stigma also.

HEAP'ED. Compact, but hardly as close as *dense*.

HEART. See corcle.

HEART'-FORM. See cordate.

HEDG'E-HOGGED. See ferinaceous.

HEL'MET. See labiate. Upper-lip.

HELMINTHOLOGY. The science of worms, including molluscous and radiated animals.

HELVOLUS. Pale red. Peach-bloom.

HEM'ISPHERE. Half a sphere.

HEPAT'ICÆ. See cryptogamia. Liverworts, p. 19 & 26.

HEPTAGYN'IA. Seven-styled.

HEPTAN'DRIA. (*Hepta*, seven ; *aner*, male.) See p. 12 & 17. Seven stamened.

HEPTAN'DROUS. Belonging to, or varying into, the class heptandria.

HERB, *her'ba*. Any plant which has not a woody stem. But when applied to the nine families (see gentes) it includes neither grasses nor lilies.

HERBA'CEOUS. Not woody. Also applied to plants which perish annually down to the root.

HERB'AGE. All that part of vegetables which is bounded by the root below, and by the fructification above. It comprises all parts of every plant, except the root and fructification, whether herbaceous or woody. See partes.

HERBA'RIUM. A collection of dried plants. No person can ever become a good practical botanist without an herbarium.

The uses of an herbarium are principally these :

1. *To revive in the memory the names and habits of plants.* No memory is sufficiently retentive to permit nothing to slip, relating to several hundred species of plants ; unless they are frequently presented to the eye.

2. *When plants are not in flower, they often want some of their most striking habits also.* It is therefore very convenient and satisfactory to compare the more minute parts, in order to insure correctness in relation to plants, which we have occasion to examine at various seasons of the year.

Directions for making an herbarium.

1. Provide yourself with about 100 old newspapers ; or other coarse paper about equal to that in quantity and texture. Let these papers be very thoroughly dried. This will be a sufficient stock for the season.

2. Procure two smooth inch-boards of the size of half of a paper ; also a weight of lead, stone, or other substance, of twenty pounds.

3. Gather 3 or 4 specimens of each plant, as it comes in flower. If you collect but few specimens, and wish to preserve them in the most beautiful form, put them between the leaves of a port folio in the field. Let the specimens be so large as to include the various parts of the plant. If it be a small plant, take the root also. If large, take it in two pieces ; one to include the flower and parts adjoining, the other the root-leaves, if any, and those near the root. Place these between the folds of the papers, as nearly in their natural state as possible. If the plant curved, let it curve in the papers ; if the flower drooped in the field or woods, let it droop in the papers, &c. Lay the papers between the boards with the weight upon them. If 20 or 30 filled papers lie upon each other, it is all the same.

4. Twice or three times each week lay your papers, containing plants, separately in the sun, with small stones on the corners, for three or four hours. When taken in, put the plants in press again. This exposure to the sun is not necessary, however with single specimens of small plants. Or if several leaves of paper be allowed to each specimen.

5. As fast as your plants become dry by absorption, put them up in books made of the same paper, with about a dozen sheets in each. Most plants will be

fit to put up, after sunning the papers five times, and pressing two weeks. When the roots are taken up, if bulbous, they should be split and immersed in boiling water, or they will be very long in drying. Most ever-greens and succulent plants, except aquatics, should be immersed in boiling water, or they will drop their flowers, &c.

6. After the season is past, (which is about the end of November,) make a large book of stiff printing paper; and fasten one or more of your best specimens of each species to the first page of each leaf. Put as many specimens on a leaf as will fill it up; leaving room for names, &c. under each. Some glue them on; others cut through the papers and raise up slips, like loops, and run the specimens under these loops. The latter method is best and cheapest.

It may be proper to observe, that if a long season of wet weather occur, or if you have not time or convenience for drying your papers in the sun, you may effect the same object by drying other papers thoroughly by a fire, and then shifting your plants into them.

Plants should never be dried so as to become brittle. The object in drying them between papers is; to prevent their crisping, to make them tough, and to retain their natural colour and texture. But still many plants cannot possibly be made to retain their natural colours.

Simple and woods flowers abound in the fore part of the season; compound and field flowers come most after the middle of July. An industrious collector will have 400 species by the first of July; and 250 species afterwards, before the season closes.

Herba'rius. An herbist. One who collects and sells plants.

HERMAPH'RODITE. See perfect flower.

HEXAG'ONAL, *hexago'nus.* Six-cornered.

HEXAGYN'IA. (*Hex*, six; *gune*, female.) See p. 16.

HEXAN'DRIA. (*Hex*, six; *aner*, male.) See p. 12.

HEXAN'DROUS. Belonging to, or varying into, the class *hexandria.*

HEXAPET'ALOUS. Six-petalled.

Hexapetaloi'des. A one-petalled corol so deeply divided as to appear 6-petalled.

Hexaphyl'lus. Six-leaved.

Hi'ans. See gaping.

HI'LUM. The external scar or mark on a seed, where the funicle, or thread, is attached to it and conveys its nutriment till ripe.

HINGE. The part of a bivalve shell, where the two valves are united by a flexible cartilage.

HIRSU'TE, *hirsu'tus.* Rough-haired. Covered with stiffish hairs, but hardly stiff enough to be called bristles.

Hir'tus. Covered with short stiff hairs. Nearly the same as hirsute.

HIS'PID, *His'pidus.* Bristly. Beset with stiff hairs, or rather with bristles, which are very short. Perhaps it differs from hirtus only in having the hairs shorter and stiffer. It seems to be applied in some cases, however, where the bristles are not very short.

Hiulcus. Cracked open; a gaping chink.

HO'ARY. Whitish coloured, arising from a scaly mealiness. See glaucus.

HOLERA'CEUS. Suitable for a pot-herb.

HOL'LOWS, (thalamia,) That kind of receptacle of *lichens*, which is spherical, nearly closed, lodged in the substance of the frond,

lined with its proper coat, under which are cells 2 or 4-seeded. Each hollow finally opens by an orifice in the surface of the frond above.—Smith.

HON'EY-CUP. See nectary.

HOOD'ED. See cowled.

HOOK'-FORM. See ungulatus.

HOOK. See hamus.

Hora'rius. Continuing but an hour.

HORIZON'TAL. Parallel to the horizon. Leaves are horizontal, when they form right angles with erect stems.

HORN. See spur.

HORN'-FORM. Shaped like a horn, or rather like a cock's spur. See spur.

Horolog'ium. A botanist, who watches the progress of vegetables as they approach maturity, particularly the developement of flowers, through every hour of the day. A table kept of such progress is called, by the French, *horologue.*

Hu'midus. Moist, humid.

HU'MIFUSE, *humifusus.* Spread over the ground. Richard defines it; spread on the ground and not rooting.

Hum'ilis. Low, humble.

HUSK. The larger kind of glume; as the husks of Indian corn.

HY'ALINE, *hyali'nus.* Colourless. Transparent like glass or water; as quartz in granite.

HYBER'NICLE, *hybernac'ulum.* See bud.

Hybernalis. Growing in the winter season.

HY'BRID, *hy'brida.* A mule. A vegetable produced by the mixture of two different species. The seeds of hybrids will not propagate. They are produced by sprinkling the stigma with the pollen of a different species. Care must be taken in such cases to prevent any pollen of its own species from falling on it first.

HYDROP'TERIDES. Water fern. A new order of ferns. It is adopted by Pursh, Torrey, &c. Isoetes, azolla and salvina are placed here.

Hyema'lis. Growing in the winter season.

Hyme'nium. An exposed or naked, dilated, appropriate membrane of gymnocarp fungi, in which the seeds are imbedded.

HYPERDECANDROUS. Flowers containing more than ten stamens.

Hypocraterifor'mis. See salverform.

HYPODECANDROUS. Flowers containing fewer than ten stamens.

Hypog'ynus. Under the style.

I. J.

JAG'GED. See laciniate.

JAWS. See faux.

ICHTHYOLOGY. The department of Zoology, which treats of fish. It includes those aquatic animals which have gills and fins.

I'cones planta'rum. Figures or drawings of plants.

ICOSAN'DRIA. (*Eikosi*, twenty; *aner*, male.) See p. 13.

The calyx is always monophyllous, and the claws of the petals fixed into the inside of it along with the stamens.

ICOSAN'DROUS. Belonging to, or varying into, the class *icosandria.*

Ic'terus. The change of colour in leaves in autumn.

IMAGO. A perfect, full-formed insect. It is applied to express the state of an insect, after it has passed from the crysalis to the insect state.

Imber'bis. Beardless. See beard.

IM'BRICATE, *imbrica'tus.* Leaves, scales, &c. lying over each other, or one covering the place where two others meet, like the shingles or tiles on a roof.

IMMARGINATE. Having no border or peculiar margin.

IMMER'SED. See submersed.

Im'pari-pinna'tus. Unequally pinnate. When a pinnate leaf is terminated by a single or odd leafet.

IMPER'FECT, *imperfec'tus.* Wanting the stamen or pistil. No flower is perfect without both organs; but with an anther and stigma the flower is perfect, though destitute of calyx and corol.

IMPUNC'TATE. See punctate.

Inæqua'lis. Unequal, which see.

Inæquivalva'tus. Valves of capsule or glume unequal.

Ina'nis. Having a spongy pith.

Inaper'tus. Hollow, but without any opening.

Inca'nus. See hoary.

Incarna'tus. Flesh-coloured.

INCI'SED, *Inci'sus.* Cut in like a gash with a knife, but not deep enough to be called a cleft. If the crenatures or serratures of a leaf are cut down, to appearance, with a slit or gash, this term applies.

INCISOR. Fore tooth. The flattish front cutting-teeth.

INCLI'NED, *inclina'tus.* Bent towards each other. Also bent towards something different.

INCLU'DING, *inclu'dens.* One thing containing another within it; as the calyx shutting up the seed, capsule or corol.

Inclu'sus. Enclosing. Opposed to exsert.

INCOMPLE'TE. See complete.

Inconspic'uus. Not apparent without the aid of a magnifier.

INCRAS'SATE. Thickening. When a flower-stem grows thicker upwards towards the flower.

IN'CREMENT. The quantity of increase.

INCUM'BENT, *incumbens.* Leaning upon or against. When an anther lies, as it were, somewhat horizontally upon the top of the filament.

IN'CURVED, *incurvatus.* Bent inwards. As a leaf bent in at the point towards the stem, a filament towards the pistil, a prickle towards the stem.

INDIG'ENOUS. Plants, growing naturally and originally in a country. It is often very difficult to determine, whether a plant is exotic or indigenous. Who can say, whether the chess (bromus secalinus) stone-seed (lithospermum arvense) and cockle (agrostemma githago) are native or exotic?

INDISTINCT. Applied to insects, whose heads and trunks are in one piece.

Indivi'sus. Undivided. Not cleft into parts. It may however be serrate, crenate or toothed; it is therefore not the same as entire.

IN'DURATED, *indures'cens.* Becoming hard, tough, or leathery.

Indu'sium. A shirt. It is used by some authors for the thin membranous covering on the fruit of ferns. But Smith prefers retaining the old name, *involucre*, which see.

Iner'mis. See unarmed.

Infer'ne. Downwards. Towards or near the base or root.

INFE'RIOR, *inferus.* Below. A calyx or corol is inferior when it comes out below the germ. See germ.

In'fimus. At the very bottom or base, lowest.

INFLA'TED, *infla'tus.* Appearing as if blown up with wind. A very small degree of inflation is sometimes noticed in descriptions; as the calyx in *silene.*

INFLEX'ED, *inflex'us.* The same as incurved.—Smith.

INFLORES'CENCE, *inflorescen'tia.* The mode by which flowers are connected to the plant by the peduncle. It is of 10 kinds. 1. Whorl. 2. Raceme. 3. Panicle. 4. Thyrse. 5. Spike. 6. Umbel. 7. Cyme. 8. Corymb. 9.

Fascicle. 10. Head. See each in its place.

Infrac'tus. Bent in with such an acute angle as to appear as if broken.

Infundibilifor'mis. See funnel-form.

Inodo'rus. Having no smell.

Inquinans. Stained. Applied to fungi, &c. when the colour appears as if painted on artificially.

Inser'tus. Inserted, fixed to or on.

Insi'dens. Sitting upon.

Insigni'tus. Marked.

Instruc'tus. Furnished with.

Integer. See entire.

Integer'rimus. Very entire, having no dentation whatever.

INTERFOLIA'CEOUS. Situated along the stem between the origin of the leaves, not opposite to them.

Intermed'ius. Between two extremes.

INTERNO'DE, *interno'dium.* The space between joints or knots.

Inter'nus. Within the inside.

Interpos'itus. Placed between.

Interrup'te. Interruptedly.

INTERRUP'TED, *interrup'tus.* A spike is interrupted, when leaves or smaller flowers are interposed at intervals.

INTERRUPTEDLY PIN'NATE. When smaller leafets are interposed among the larger; as the potatoe and agrimone leaves.

INTERSCAPULARS. The back feathers of a bird, between the bases of the wings.

Inti'mus. Entirely within.

INTOR'SION, *intor'sio.* Twisting, twining, or bending from a strait upright position. See twining, contorted and twisted.

Intor'tus. Twisted inwards.

INTRAFOLIA'CEOUS. Within the leaf. A stipule is intrafoliaceous, when it originates a little above the origin of the petiole, which brings it, as it were, within the bosom of the leaf.

INTRODU'CED. Not originally native. Brought from some other country.

Intror'sum. Inwardly.

INVER'SELY HEART'-FORM. See obcordate.

Inunda'tus. See submersus.

INVOLU'CRATE. See involucred.

INVOLU'CRE, *involu'crum.* That kind of calyx which comes out at a distance below the flower, and never encloses it like the spathe. It is further distinguished from the spathe in being of a leafy texture and colour, whereas the spathe is generally membranaceous or coloured. It is generally found at the origin of the peduncles of umbels; and sometimes attached to other aggregate flowers. When it is all on one side, it is called *dimidiate*, halved. See partial.

Involucres of ferns generally lie on the tops of the capsules, like a piece of linen spread out to dry; hence they are called *indusium*, a shirt. They are denominated *corniculatum*, when cylindric, hollow and enclosing the seed.

INVOLU'CRED, *involucra'tus.* Having involucres.

INVOLU'CEL. A partial involucre, or a little involucre.

Invol'vens. Arching over.

IN'VOLUTE, *involu'tus.* Rolled inwards. A term in foliation; applied to leaves whose opposite margins are rolled in and continued rolling, till the two rolls meet on the midrib and parallel to it. Applied to shells, it signifies, that the spire is in whorls which are concealed within the shell, as cypraea.

JOINTS. Swelling knots, rings, or narrowed interstices, at regular intervals along culms, pods, spikes, leaves, &c.

JOINT'ED. Having joints.

IRID'EOUS, IRIDES'CENT. Reflect-

ing light somewhat like a rainbow.

IRREG'ULAR, *irregula'ris.* Differing in figure, size or proportion of parts, among themselves.

IRRITABIL'ITY. The power of being excited so as to produce contractile motion. That there is such a thing as vegetable irritability is evident to every one, who examines the common barberry flower. Touch the inside of a stamen near its base with the end of a horse-hair, or any thing about the same size, and it will instantly strike its anther against the pistil and shoot a quantity of pollen upon the stigma, or in that direction.

ISH. See acutiusculus.

Isthmus. Long narrow joints in legumes or loments.

Jug'um. Yoke. In pairs.

Ju'lus. See ament.

K.

KEEL. The lower petal of a papilionaceous corol. The stamens and pistils lie enclosed in it.

KEEL'ED. Having a ridge resembling the keel of a boat or ship. A leaf, capsule, calyx, &c. is keeled when it has the midrib, angle, or peculiar process, running along the back of a compressed form, and attached by one edge.

KER'NEL. See nucleus.

KID'NEY-FORM. Hollowed in at the base with rounded lobes and rounded end. Its breadth is generally as great as its length.

KNE'ED. See geniculate.

KNOB'BED. In thick lumps; as potatoes.

KNOBS. (Cephalo'dia.) That kind of receptacle of lichens, which is convex, more or less globular, covered externally with a coloured seed-bearing crust, and placed generally at the extremities of stalks, originating from the frond, permanent; rarely sessile. Sometime they are at first *spangles* on filamentous lichens, and afterwards become convex irregular knobs. They are simple, compound or conglomerate.—Smith.

KNOT. A swelling joint. See joints.

KNOT'TED. Having swelling joints.

KNOT'LESS. Without swelling joints. See enode.

L.

LA'BIATE. Having lips; or a calyx or corol divided at top into two general parts, somewhat resembling the lips of a horse or other animal.

Labiate corols are divided into *ringent* and *personate.*

Ringent, such as have the lips open or gaping.

Personate, such as have the lips closed or muffled.

Labyrinthifor'mis. Winding and turning by various involutions and contortions like a labyrinth.

LAC'ERATED, *lac'erus.* Torn. Cut, or apparently torn, into irregular segments.

Lacin'ia. The divisions of a calyx, corol, leaf, &c. into which they are cleft, torn or divided.

LACIN'IATE, *lacinia'tus.* Jagged. Irregularly divided and subdivided, cut or torn. Hardly different from lacerated.

LACTES'CENCE, *lactescen'tia.* Milkiness. The milky juice of some plants; as the milkweed (asclepias.) It is also called by this name, when the juice is red; as in the bloodroot (sanguinaria.)

Lac'teus. Milk-white.

LACU'NOSE, *Lacuno'sus.* Pitted. Hollow between the veins of a leaf. When the blisters are under side of the leaf instead of the upper. See bullate.

Lacu'stris. Growing most naturally in or about lakes.

Læ'vis. Smooth, even, polished; not striate, or wrinkled.

Lamel'la. A thin plate. Applied to the gills or vertical plates under the hat or pileus of the agaric fungus, or toadstool.

—— *equa'lis.* When all the gills reach from the stem to the margin of the hat.

—— *inequa'lis*, or *interrup'tus.* When some reach but part of the way.

—— *biseria'lis.* When a long and short gill alternate.

—— *triseria'lis.* When 2 long and 2 short gills alternate in pairs.

—— *ramo'sa.* When several gills unite in one, so as to appear branched.

—— *decur'rens.* When they run down the stem more or less.

—— *veno'sæ.* When so narrow as to have the appearance of veins.

LAMEL'LATE. In the form of thin plates, or having thin plates.

LAM'INA. The broad upper part of the petal of a polypetalous corol. See petal.

LAMINATED. Consisting of several thin flat portions.

LA'NATE, *lana'tus.* Woolly. Covered with curly, crooked, close, thick pubescence. Not so fine, nor so closely matted together as *tomentose.*

LANCE'OLATE, *lanceola'tus.* In the form of the lance of the ancients. When the length greatly exceeds the breadth; and it tapers gradually from near the base to the apex.

LANCE-O'VATE, &c. *lanceola'to-ova'tus*, &c. Pertaking of the lanceolate form and of that with which it is compounded.

Lanu'go. Down, or wool.

Lappula'ceus. Burr-like.

LARVA. The caterpillar state of an insect. It is called maggot, skipper and grub, while in this state.

Laterifol'ius. Side-leaved.

LAT'ERAL, *latera'lis.* On one side.

Latifol'ius. Broad-leaved.

Latери'tius. Brick-coloured.

Lati'tans. Hidden, concealed.

LAT'TICED. Resembling net-work.

LAX, *Lax'us.* Limber. See flaccid.

LEAF. That part of most vegetables, which presents more surface to the atmosphere, than all other parts; and consists principally of the cellular integument covered with the cuticle. Leaves imbibe and give out moisture; generally more with one surface than the other. Aquatic leaves perspire faster than dry-land leaves; which is the reason for their drying so much sooner. Some leaves imbibe sufficient moisture from the atmosphere for their support for a long time; as the common liveforever will grow if broken off and stuck up in a dry place.

Leaves are divided into *simple*, when one leaf grows on one petiole; and *compound*, when several leafets grow on one petiole.

They are *evergreen*, remaining through the winter; or *deciduous*, falling off at the close of the year.

They are farther distinguished by their *forms*, *surfaces* and *positions.* All of which are described under their peculiar names.

LEAFING SEASON. That time in the year when most leaves come out. In North America, the proper leafing season is in April.

LEAFET, or LEAFLET. One of the lesser leaves which, with others, constitute a compound leaf. A simple leaf is never a leafet, however small.

LEAFLESS. Destitute of leaves, naturally. This term does not

apply in cases of *defoliation*, which see.

LE'AF-STALK. See petiole.

LE'AFY. Furnished with leaves. Abounding in leaves. Leaves intermixed with flowers on a spike.

LEAT'HERY. See coriaceous.

LEGU'ME, *legu'men*. A pod, without a longitudinal partition, with its enclosed seeds attached to one suture only; as the pea. Those with transverse partitions are usually called *loments*, which see.

LEGU'MINOUS. Bearing legumes.

LENGTH and BREADTH. When applied to bivalve shells, *length* is measured from the beak or cartilage to the margin below, and *breadth* is taken in a transverse direction to the length.

LENTIC'ULAR, *lenticula'ris*. Lentil-form. It is applied to a kind of glandular roughness on the surface of some plants. Form of a convex lens.

Lepan'thium. Used as a substitute for some kinds of nectary by Nuttall, De Lamark, &c.

LEV'EL-TOP'PED. See fastigiate.

LI'BER. The innermost layer of the bark, or the last year's deposit. Smith, p. 25.

Li'bera. Free, not adnate, or attached.

LIC'HENES. See p. 19 & 26.

LID OF MOSSES. See operculum.

LIGAMENT PERFORATION. A perforation through the shell of the *anomia* genus, by which it is attached to rocks, &c.

LIGHT. Various motions and inclinations of plants prove the effect of light upon them. Trees present their leaves outward in quest of light, because it is darkest in the centre. Plants in a green-house all present the upper surfaces of their leaves towards the enlightened side of it. Wheat-heads hang towards the sun. Most compound flowers follow the sun through the day. Plants deprived of the light lose their green hue; as potatoe tops growing in a dark cellar.

LIGNO'SE, *ligno'sus*. Woody.

Lig'num. See wood.

LIG'ULA. A strap or strap-form organ. It is generally applied to the membrane or stipule at the top of the sheath of a grass-leaf.

LIG'ULATE, *ligula'tus*. That kind of floret, in some compound flowers, which consists of a single strap-like petal which becomes tubular at the base only; as all the florets in a dandelion, and the ray florets in a sunflower.

Li'lia, LIL'IES. The family of lilies. See gentes.

LILIA'CEOUS. A corol with six petals spreading gradually from the base, so as altogether to exhibit a bell-form appearance.

LIMB, *lim'bus*. The broad spreading part of the petal of a monopetalous corol. When applied to shells it means the whole circumference or outlines of them.

LINE, *li'nea*. The breadth of the crescent at the root of the finger nail.

LIN'EAR, *linea'ris*. Continuing of the same breadth throughout most of the extent. Linear leaves always, or with very few exceptions, become narrowed or pointed at one or both ends.

LIN'EATE, *linea'tus*. Marked with lines.

Lin'guiform. Tongue-like. Thick, fleshy, linear, blunt at the end.

LI'ON-TOOTH'ED. See runcinate.

LIP, or LIP'PED. See labiate. When applied to univalve shells, it means the outer expanded part of the opening.

Lirel'læ. See clefts.

Littora'lis. Growing on the sea-coast; also on the shores of rivers.

Li'vidus. Dark grey, inclining to violet.

LOBE, *lo'bus.* Divisions, which are rounded, or parted by rounded or curved incisions. Sometimes it seems to be applied to cases where it has nothing to distinguish it from a segment cut off by a cleft incision, except by its being larger.

LO'BED, *loba'tus.* Divided into lobes. Deeply parted with the segments distant or spreading and large.

Loculamen'tum. See cell. Cavities containing seeds.

Loc'ulus. The little cell of an anther, which contains pollen.

LO'MENT, *lomen'tum.* A legume pod with transverse partitions. This term is generally applied to the legumes in the natural order Lomentacæ.

Longifol'ius. Long-leaved. See relative proportions.

Longis'simus. Very long.

Lon'gus. Rather long. See relative proportions.

LOOSE. Open, not compact.

LORES. The naked lines or spots on a bird's head, between the eyes and the base of the bill.

Lo'rula. The long threads of Usnea. This lichen, so common on trees, is erroneously called moss by most people.

Lu'cidus. Bright, shining. Nearly the same as nitidus.

LU'NULATE, *lunula'tus.* Shaped like a *crescent*, which see.

LUNULE. A half-moon-like depression just below the beak of a bivalve shell. It is anterior or posterior according to the slope it is on. See slope.

LU'RID, *lu'ridus.* Of a palish, dull, deathly colour. Most plants with lurid petals are more or less poisonous; as tobacco, henbane, thorn-apple.

LUSTRE. The peculiar appearance of reflected light, as presented by a mineral.

LUTES'CENT, *lutes'cens.* Approaching to a yellow colour.

Lu'teus. Yellow.

LUXU'RIANT, *luxur'ians.* See full-flowered.

LY'RATE, *lyra'tus.* Pinnatifid, with the divisions at the apex largest.

LY'RATE-PIN'NATE. Pinnate with the odd terminal leafet largest.

M.

Macula'tus. Spotted.

MAILED. Covered with a hard substance resembling armour.

MALE. See staminate.

MANDIBLES. The upper jaws of a bird's bill. It is also applied to the horizontal pincers attached to the mouth of some insects.

Manifes'tus. Very apparent.

MA'NY. Whenever there are more than are usually numbered of that kind; as we say, 1-seeded, 2-seeded, 3-seeded, 4-seeded, many-seeded.

MARCES'CENT, *marces'cens*, or *mar'cidus.* See withering.

MAR'GINATED, *margina'tus.* Having a margin differing in some measure from the disk.

MAR'GIN, *mar'go.* The circumference or edge. See border. The circumference of a shell.

Marit'imus. Growing naturally near the seaboard. It may be extended several miles from the water.

MAR'ROW. See pith.

Mas'culus. See staminate.

MAS'KED. Personate. See labiate.

MATRIX. Gangue. The mineral immediately embracing an ore, within a vein in a rock.

MATU'RE, *matu'rus.* Full-grown, but not entered upon a state of decay.

MEAS'URES. Proportion between parts is better than any measure. But when measures are adopt-

ed, they should be taken from parts of the hand and arm; because the parts of plants vary about as much as the hand; and in adopting these measures the same allowance should be made.

1. *Line*, the crescent at the root of the nail. About one-twelfth of an inch. 2. *Nail* (unguis.) Length of the nail. About half an inch. 3. *Inch* (pollex.) Length of the first joint of the thumb. 4. *Palm.* Breadth of the four fingers. About three inches. 5. *Short'-span* (spithama.) Distance between ends of thumb and fore-finger. About seven inches.

Long'-span (dodrans.) Distance between ends of thumb and little finger. About nine inches.

Foot (pes.) Distance between the point of the elbow and the second joint of the thumb. About twelve inches.

Cu'bit (cub'itus.) Distance between the point of the elbow and of the middle finger. About 18 inches.

Arm (brachium.) Distance between armpit and the end of middle finger. About 24 inches.

Fathom (orgya.) Distance between the ends of the middle fingers, when the arms are extended.

MÉDIC'INAL, *medicina'lis.* Plants possessing principles sufficiently active to entitle them to a place in the *materia medica.* Many physicians daily trample under foot plants, which possess similar qualities with those which they purchase from Europe, and often the very same plants; but being ignorant of those botanical principles by which the names and properties of plants are ascertained, they are consequently ignorant of the absurdity. See qualities.

Medio'cris. Averaging in dimensions compared with other parts. See relative proportions.

Med'ius. In the middle. This term is used when one part is between the other parts, though sometimes much nearer one than the other; as a bract is in the middle of the peduncle, when it is much nearer the flower than to the base of the peduncle. This name is sometimes given to species holding a middle place between extremities, expressed by the names of other species of the same genus.

Medul'la. See pith.

MELLIF'EROUS, *mellif'era.* Producing or containing honey.

Melli'go. Honey-dew on leaves.

MEMBRANA'CEOUS. Made up, apparently, of the two plates of the cuticle, without any cellular integument between them. Nearly transparent, very thin and colourless.

Membrana'tus. Flattened and resembling a membrane.

Mensu'ra. See measures.

METH'OD, *method'us.* A mode of arranging plants in classes, orders, &c. Richard has 14 pages on this head; in which he gives the methods of Tournefort and Linneus at length. But as we have given the method of Linneus under Grammar of Botany, and throughout the Dictionary; and as Tournefort's method is no where adopted in this country; this article is principally omitted.

It may be observed that:

TOURNEFORD'S METHOD

Divides plants into *herbs* and *trees.* The HERBACEOUS plants are divided into 17 classes. Fourteen of these are distinguished by the *form* of the *corols;* as, 1. *Infundibiliformis.* 2. *Personate,* &c. The other 3 classes are *apetalous* and distinguished by *having stamens, but no apparent flow-*

ers nor apparent seed. The TREE kinds are divided into 5 classes.

MID'RIB. The main or middle rib of a leaf running from the stem to the apex.

Milia'ris. In the form of millet seed.

Minia'tus. Scarlet, vermillion colour.

Minutis'simus. Extremely small or minute.

MISSILE-TONGUE. When the animal can thrust the tongue far out of the mouth.

MI'TRE-FORM. Terminating in two divisions, in some measure resembling a bishop's mitre.

MOLARES. Grinders. Teeth farthest back—double teeth.

Molendina'cea. Many winged.

Mol'lis. Soft.

MOLLUSCOUS ANIMALS. Those that have the medulary masses, in which the sentient principle resides, inveloped in a soft body; as the oyster.

MONADEL'PHIA. (*Monos*, one; *adelphos*, brother.) See p. 13.

MONADEL'PHOUS. Belonging to, or varying into, the class *monadelphia.*

MONAN'DRIA. (*Monos*, one; *aner*, male.) See p. 12.

MONIL'IFORM. See granulate. Globular joints of antennae.

MONOCOTYLE'DONS. See cotyledon.

MONŒ'CIA. (*Monos*, one; *oikos*, house.) See p. 14.

MONŒ'CIOUS, *monoi'cus.* Belonging to, or varying into the class monœcia.

MONOGYN'IA. (*Monos*, one; *gune*, female.) See p. 16.

MONOPET'ALOUS. The whole corol in one piece. Sometimes it is so deeply parted, that it appears to be polypetalous until it is pulled off and closely examined at the base. In most monopetalous corols, the stamens are attached to the tube. They are divided into bell-form, funnel-form, salver-form, wheel-form, and labiate, which see.

MONOPHYL'LOUS. (*Mon'os*, one; *phullon*, a leaf.) One-leafed. A calyx all in one piece. All the calyxes in the class *icosandria* are of this kind. They are often so deeply divided, that a student may mistake them for polyphyllous, without particular attention.

Monopteryg'ia. See wings. One winged.

Monopyre'nus. Enclosing but one nut or stone.

Monosper'mus. One seed to a flower.

Monostac'hyos. (*Monos*, one; *stachus*, spike.) Single spiked.

MON'STROUS. Plants producing any part different from the same part, when growing wild. As the rose has but five petals in a wild state; but, by rich cultivation in gardens, the stamens are mostly changed to petals. Carnations and peony are examples also. These are all monsters. See florist and full-flowered.

Monta'nus. Growing most naturally on mountains.

MOON'FORM. See crescent-form.

MOS'SES. See musci.

MOUTH. See faux.

Mu'cidus. Resembling mouldiness, or mucor.

MU'CRONATE, *mucrona'tus.* Having a rounded end, tipped with a prickle; which often appears rather an extension of the mid-rib.

MULE. See hybrid.

Multangula'ris. Many-angled. Having several corners or ridges.

Multicapsula'ris. Many-capsuled. Several capsules to each flower.

Multicau'lis. Producing many stems.

Multidenta'tus. Many-toothed.

MUL'TIFID, *Mullif'idus.* Many-cleft.

Multiflo'rus. Many-flowered.

Multil'obus. Many-lobed.

Multilocula'ris. Many-celled.

MULTIPAR'TITE. *Multiparti'tus.* Many-parted.

Mul'tiplex. Many-fold. Having petals lying over each other in two rows.

MUL'TIPLIED, *multiplica'tus.* See full-flowered.

Multisiliquo'sus. Many pods proceeding from the same point.

MULTIVALVE, *multival'vis.* A glume with many chaffs or valves. Applied to shells it embraces the order, which has more than two shells to each animal.

Multot'ies. Often times.

Mu'niens. Leaves drooping down and hanging over the stem, &c. at night.

Muni'tus. See fenced.

MU'RICATE, *murica'tus.* Armed with sharp spines. Covered with subulate prickles.

MUS'CI, MOSSES. The second order of the class *cryptogamia.* All mosses have lids on the capsules. See p. 18 & 27.

Mut'icus. See awnless.

MU'TILATED, *mutila'tus.* Not producing parts with their full complete forms.

N.

NA'KED. Wanting a covering analagous to that of most plants. As stem without leaves, leaves without pubescence, corol without a calyx, seed without a pericarp, receptacle without chaff, pubescence, &c.

Na'nus. Dwarfish, very small.

NAP. See tomentose. Downy or like fur.

Napifor'mis. Resembling a turnip.

NA'TANT, *nat'ans.* Floating. When the plant is fixed by the root at the bottom and its leaves float on the top of the water, as the pond lily, (nymphæa.) Animals with the faculty of swimming.

NA'TIONS. See gentes.

NA'TIVE. Originally of that country. Not introduced.

NAT'URAL CHAR'ACTER. The description of the parts of fructification at large; without regard to any method: or at least so given as to be capable of being used under any method. See descriptions.

NAT'URAL CLASS. See natural orders.

NAT'URAL HIS'TORY. That department of science, which treats of the productions of nature as they come from the hand of the Creator; without any decomposition or chemical changes.

It is generally divided into three branches.

1. ZOOL'OGY. Which includes all animals; as Beasts, Birds, Reptiles, Fishes, Insects, Snails, Clams, Worms and Corals.

2. BOT'ANY. Which includes all plants. As Palms, Grasses, Lilies, Herbs, Trees, Ferns, Mosses, Liverworts, Seaweeds and Mushrooms.

3. MINERAL'OGY. Which includes the unorganized mass of our globe. As Pit-coal, Common Salt, Flint, Lime, Clay, Iron-ore, Silver-ore, Lead-ore, &c.

NAT'URAL OR'DERS. An arrangement of plants according to their natural affinities. Such an arrangement is of great use both in finding out a plant, and examining its relations and qualities. See p. 22 & 25.

Linneus supposed that plants of the same natural order possessed similar medical qualities. But the odour of plants must be taken into consideration; as all

nauseous-scented umbelliferous plants are poisonous, while the sweet-scented are pleasant stomachics, &c.

NA'VELLED. See umbilicatus.

NAVIC'ULAR, *navicula'ris*. See boat-form.

NAYANT. Floating. When animals float, without the effort of swimming, they are nayant.

NECESSA'RIA, polygamia. See p. 18.

NECK. The upper part of the tube of a corol.

NECTARIF'EROUS. Bearing nectaries. Producing honey.

NEC'TARY, *necta'rium*. The part of a flower, which secretes honey. It is either a distinct horn, gland, spur, scale, cup, &c. or the claw or some other part of the corol secreting honey. This name is applied to any appendage to the flower, which has no other name.

Nemorosus. Growing naturally in groves, where the under brush is cleared away.

NERVO'SE, NER'VED, *nervo'sus*. Leaves are nerved, when they have rib-like fibres running from the base towards the apex. In numbering nerves for a specific character, the midrib is counted with the lateral nerves.

NEU'TRAL. Having neither stamens nor pistils, consequently barren; as the ray-florets of the sun-flower.

NICK'ED. See emarginate.

NICTITANT MEMBRANE. A semi-transparent membrane, which covers the eyes of some animals at pleasure.

Ni'dulans. Nesting. When seeds are placed in cotton, &c. as in a nest.

Nig'er. Black.

Nig'ricans. Blackish, sooty.

Ni'gro-cœrul'eus. Dark-blue.

Ni'sus formati'vus. That principle of vital energy, which tends to restore lost or injured parts.

Nit'idus. Glossy, glittering.

Niv'eus. Snow-white.

NOD'DING. See nutans.

NODE, *No'dus*. See knot. Used by Barton for internode. Fl. Ph. p. 61.

NODULE. A spheroidal mass of any mineral substance.

No'men, NAME. See generic name and specific name.

NOTCH'ED. See crenate.

Nu'bilus. Grey and white, cloudy. Resembling cumulous clouds. See *cumulus*.

Nucamen'tum. See ament.

NU'CIFORM. Resembling a nut.

Nuc'leus. Nut or kernel. The inner seed or kernel is properly the nucleus; and its hard shell is the putamen. But the whole including both putamen and nucleus, is the nut, *nux*.

Nu'dus. See naked.

Nudius'culus. Nakedish.

Nul'lus. None.

Numero'si. Many. An indefinite number.

Num'erus. A determinate number.

NUT, *nux*. See nucleus.

NU'TANT, *Nu'tans*. Nodding. When above half of whatever it is applied to, droops or hangs down. See *pendulus*.

Nuta'tio. The various inclinations of the parts arising from the effect of the sun's rays.

O.

Ob, obver'se. Reversed or inversed. Often combined with ovate, cordate, &c. as obcordate, inversely heart-form.

OBCON'IC. Conic with the point, or apex, downwards.

OBCOR'DATE. Heart-form, with the apex next to the stem, or place of insertion.

OBLANCE'OLATE. Lanceolate with the base the narrowest.

OBLI'QUE, *obli'quus*. A position between horizontal and verti-

cal; or between perpendicular and the plane of the base. It is also applied to leaves, petals, calyxes, &c. which are, as it were, cut obliquely; or whose bases are shorter on one side than on the other.

OBLONG, *oblon'gus*. Having the length twice or more than that of the breadth, with the opposite sides somewhat parallel.

Oblongius'culus. Somewhat oblong.

OBO'VAL, *obova'lis*. If it differs at all from obovate, it must be more nearly oval—having the ends nearer equal in width.

OBO'VATE. Ovate, with the narrowest end towards the stem or place of insertion.

Obscu're. Obscurely.

OB'SOLETE, OB'SOLETELY, *obsole'tus, obsole'te*. When teeth, notches, serratures, &c. are obscure and appear as if worn out.

Obtu'se. Obtusely.

OBTU'SE. See obtusus.

Obtu'se-acumina'tus. Blunt with a small point.

Obtusius'culus. Obtusish.

Obtu'sus, OBTU'SE. Ending bluntly, or in an apex more or less rounded.

Obver'sus obver'se. See ob.

OB'VOLUTE, *obvolu'tus*. A term in foliation; applied to leaves where two opposite ones are conduplicate, with one edge of each leaf between the edges of the other.

OCCIPITAL. Pertaining to the back part of the head.

OCELLATE. Eye-like spots, as on the wings of some butterflies.

Occlu'sus. Closed.

Oc'hrea. A cylindric sheath or stipule. It is applied to the membranaceous stipules of most of the species of Polygonum; also of some species of Cyperus.

OCTAN'DRIA. (*Octo*, eight; *aner*, male.) See p. 13.

OCTAN'DROUS. Belonging to, or varying into, the class *octandria*.

Octo'fidus. Eight-cleft.

OCTOGYN'IA. (*Octo*, eight; *gune*, female.) See p. 16.

Octolocula'ris. 8-celled.

Octopet'alus. 8-petalled.

Octophyl'lus. 8-leaved.

Odora'tus. Scented, odorous.

Officina'lis. Such plants as are sold in the shops for some use, either in medicine or the arts.

OID, *Oi'des*. When this terminates a word it imports resemblance to the part or plant to whose name it is annexed. Petaloid, resembling a petal; thalictroides, resembling a Thalictrum, &c.

Oligosper'mus. Few-seeded.

One-si'ded. Flowers, &c. on one side of a stem, &c.

OPA'QUE, *opa'cus*. Neither transparent nor shining.

OPER'CULATE, *opercula'tus*. Having a lid.

Oper'culum. The lid or covering on the capsule of mosses. This is generally covered by the calyptre when young. After the calyptre is gone and the seeds are ripe, the lid falls also. This term is also applied to the covering of other capsules, resembling the lids of mosses. When applied to Conchology, it means a cartilaginous, crusty, or shelly appendage to the animal by which it closes its shell after its body is drawn into a univalve shell.

OP'POSITE, *opposi'tus*. Standing at the same height with base against base, on different sides of a stem.

Oppos'ite. Oppositely.

Oppositifol'ius. Set opposite to the base of a leaf; as some peduncles and stipules are placed.

Oppos'ite-pinna'tus. Leafets of a pinnate leaf set opposite to each other.

Orbicula'ris. Nearly circular.

Orbil'læ. See orbs. Little orbs.

ORBS. That kind of receptacle of lichens, which is flat, orbicular and dilated, of the substance of the frond, terminal, peltate, without a border, but often surrounded with radiating shoots. The membrane, or disk, under which the seeds are lodged, is smooth, nearly of the colour of the frond. Spurious orbs, bordered like shields or spangles when young, are sometimes found in the genus *cornicularia*.—Smith.

ORCHID'EOUS CO'ROL. Like the orchis; having 4 arched petals, and the fifth longer.

OR'GYA. Fathom. See measures.

OR'IFICE. Any hole or opening into a capsule, corol, &c.

ORNITHOLOGY. That department of zoology, which treats of birds.

Os. See faux. Mouth, jaws.

OS'SEOUS. Bony, hard.

OV'AL, *ova'lis.* The length exceeding the breadth in any proportion, with the two ends of an equal breadth, curvature and form, or nearly so; the sides curving from end to end.

Ova'rium. Used by Nuttall for an ovate germ.

O'VATE. Egg-form. The length exceeding the breadth, in any proportion, the end next to the stem, exceeding the other in breadth; the sides curving from end to end.

OVIPAROUS. Animals produced from eggs, as birds, fish, &c.

OVOIDAL. Somewhat egg-shaped.

OVUM. An egg.

P.

Pa'gina. The surface of a leaf. The upper surface is *pagina superior*; the lower surface, *pagina inferior.*

PAL'ATE. A prominence, process or elevation in the lower lip of a labiate corol, which tends more or less to close the throat.

Pal'ea. See chaff.

PALEA'CEOUS. See chaffy.

Palma'ris. Hand's breadth.

PAL'MATE, *palma'tus.* Divided deeply and spreading, so as to resemble the hand with spread fingers. When the divisions are very narrow and almost down to the stem of a leaf, it is called *pedate*, from its supposed resemblance to a bird's foot. Some pedate leaves are hardly connected at all at the base, and almost run into the compound *digitate* leaf.

PALPI. Feelers. Processes or fibres attached to the mouths of insects.

Palu'stris. Growing naturally in swamps and marshes.

Panduriformis. Guitar-form, or fiddle-form. Oblong, broadish near the base and contracted on the sides.

PAN'ICLE, *panic'ula.* When the peduncles along the sides of the main peduncle of a raceme, are divided, it takes the name of panicle; as oats. But if it is still in a close, compact form, it is called a *thyrse*, as the lilac.

PAN'ICLED, *panicula'tus.* Disposed in the form of a panicle; or bearing panicles.

PAPILIONA'CEOUS. (*Papilio*, a butterfly.) Butterfly-form; as the pea-flower. When complete, it consists of the *banner*, the upper petal which generally spreads over or above the others; the *wings*, the two side petals, next below the banner; the *keel*, the lower boat-form petal, generally enclosing the stamens and pistil. It is sometimes called the *pea-bloom* flower.

PAPILLA. Fleshy process or point.

PAPILLO'SE, *papillo'sus.* (*Papilla*, a nipple.) Covered with fleshy points or protuberances. See verrucose.

PAPPO'SE, *pappo'sus.* Bearing pappus or aigrette.

Pap'pus. See aigrette. Seed down.

PAPULO'SE, *papulo'sus.* (*Papula*, a pimple.) Pimply, bladdery or blistered.

PARABOL'IC. Conic, with the top rounded off, considerably below where it would terminate in the apex, if completed in the conic form.

PAR'ALLEL, *parallel'lus.* Two lines or opposite sides, running nearly equal distances from each other. The opposite edges of a leaf are parallel when the leaf is linear.

PARASIT'IC. Drawing support from another plant. Growing out of another; as the dodder.

Paren'chyma. A succulent vegetable substance; as the thick part of leaves between the opposite cuticles, the substance around the pith of herbs, the pulpy part of apples, &c.

PARI'ETAL, *parieta'lis.* Walled around. Having an enclosing or encircling ring.

PAR'TED, *parti'tus.* Deeply divided, almost to the base.

Par'tes prima'riæ. The three primary parts of a vegetable are: 1. The *root*, or descending part. 2. The *herbage*, or ascending part, except; 3. The *fructification*, comprising the flower and fruit.

PAR'TIAL, *partia'lis.* Particular, not general. Applying to an entire part of a general whole. The perianth, involucre, petiole, &c. of one floret, or of a separate part of all the florets, which with others constitute a compound or aggregate. The perianth, involucre, &c. to the whole is called general or *universal.*

PAR'TIBLE, *parti'bilis.* Easily separating into parts. Bipartible, into 2 parts. Tripartible, into 3 parts, &c.

PARTITION. The membrane, &c. which divides pericarps into cells. It is *parallel*, when it unites with the valves, where they unite with each other. It is *contrary* or *transverse*, when it meets a valve in the middle, or in any part not at its suture, or juncture with another.

Patel'lulæ. See spangles.

Pa'tens. Spreading so as to form a moderately acute angle; considerably less than a right one, or a square.

Patentis'simus. Spreading almost to a right angle.

Pat'ulus. Somewhat spreading. Open, loose.

Pau'ci. Few in number.

Pauciflo'rus and *paucifol'ius.* Few-flowered and few-leaved.

PE'A-BLOOM. See papilionaceous.

PEC'TINATE, PEC'TINATED, *pectina'tus.* So finely pinnate or pinnatifid as to resemble the teeth of a comb.

PECTORAL FINS. A pair growing on each side of the thorax, or breast.

Peda'lis. About a foot high.

PE'DATE, *peda'tus.* See palmate. Bird-foot like.

PEDAT'IFID, *pedatif'idus.* Nearly the same as pedate; perhaps hardly so deep-cut.

PED'ICEL, *pedicellus.* A partial peduncle.

PED'ICELLED, PEDICEL'LATE, *pedicella'tus.* Having a pedicel.

PE'DUNCLE. See pedunculus.—Flower stem.

PE'DUNCLED, *peduncula'tus.* Having a peduncle.

Peduncula'ris. Appertaining to, or fixed on, a peduncle.

Pedun'culus, PE'DUNCLE. The stem bearing the flower and fruit, which does not spring naked from the root. Those which spring immediately from the root without leaves, are called *scape.* As the dandelion has a *scape*, the apple a *peduncle.*

PELL'ICLE, *pellic'ula.* A thin mem-

brane-like substance. The close covering of some seeds; sometimes it is a little mucilaginous or downy.

PELLUCID. Transparent, translucent, or limpid.

Pel'læ. See targets.

PEL'TATE, *pelta'tus.* Having the petiole attached to the under side of the leaf. In all cases of leaves and flat stigmas, when the petiole or style is attached to the disk instead of the margin, they are peltate; as the leaf of nasturtion and the stigma of the yellow water-lily.

PEN'DANT. Hanging down.

PEN'DULOUS. When the whole of the part droops, or hangs down.

PEN'CIL-FORM, *pencil'lifor'mis.* Shaped like a painter's pencil, or little round paint-brush.

Pentacoc'cus. A 5-grained capsule.

PENTAGO'NAL, *pentago'nus.* Five-cornered.

PENTAGYN'IA. (*Pente*, five; *gune*, female.) See p. 16.

PENTAN'DRIA. (*Pente*, five; *aner*, male.) See p. 17.

Pentan'drous. Belonging to, or varying into, the class *pentandria.*

Pentapetalus. 5-petalled.

Pentapteryg'ia. See wings. Five-winged.

Pentaphyl'lus. 5-leaved.

PERCHING. A bird having grasping feet.

Peregri'nus. Foreign, strange, wandering.

PEREN'NIAL, *peren'nis.* Continuing more than two years.

Perexi'lis. Slender.

PER'FECT FLOW'ER. Having both stamens and pistils.

PERFOLIATE, *perfolia'tus.* Perforating a leaf. Having the stem running through the leaf. But the leaf is not formed by the union of opposite bases, as in the *boneset* (eupatorium;) for in this case the leaves are connate. It is applied to antennae when the main thread passes through the joints.

Perfoliate is sometimes the specific name where the leaves are nearly connate (as eupatorium perfoliatum;) and even where the leaves are merely clasping (as campanula perfoliata.)

PER'FORATE, PER'FORATED, *perfora'tus.* Having holes as if pricked through. Punctate may differ in presenting spots like points, which are not holes. Pertuse perhaps is synonymous with perforated. These dots may be seen by holding St. John's wort and many other leaves to the light. This term is applied to stigmas, drupes, &c.

PERIANTH, *perian'thum.* (*Peri*, about; *anthos*, flower.) That kind of calyx, which is immediately adjoining the corol, stamens and pistil, or to such of these organs as are present. It is *superior*, when it grows on the germ; it is *inferior*, when it grows out from below the germ. See monophyllous and polyphyllous.

PER'ICARP, *pericarpium.* (*Peri*, about; *karpos*, fruit.) Seed-case. Any bag, shell, pod, pulp, berry, or other substance, enclosing the seed.

PER'ICHETH, *perichæ'lium.* (*Peri*, about; *chaite*, crest.) An involucre surrounding the base of the peduncle of mosses, among the leafets, but differing from them in form. See calyptre.

Peri'dium. A round membraneous dry case, enclosing the seeds in some angiocarp fungusses.

PER'IGONE. A periant calyx, or corol.

PER'ISPERM. A substitute for pericarp.—Nuttall.

PERISPOR'IUM. Capsule. Nuttall uses it to express a chaffy covering to seed.

Peristom'ium. The fringe, teeth, or membrane, around the mouth of the capsules of mosses, under the lid.

Perithecium. A perianth-like organ surrounding the seed-cases of lichens, or capsules of mosses and fungi.

PER'MANENT. Any part of a plant is permanent, which remains longer compared with other parts of the same plant, than is usual for similar parts in most plants. As the calyx of the quince remains on the end of the fruit, till it ripens.

Perpusil'lum. Very little.

Persis'tens. See permanent and ring.

PER'SONATE, *persona'tus.* See labiate. Muffled, lipped flower.

PERTU'SE, *pertu'sus.* Punched.—See perforated.

Pes. See measures. One foot.

PE'TAL, *pet'alum.* The coloured leaf or leaves of the corol. The petal of a monopetalous corol is divided into the *tube* and *limb;* which see. Each petal of a polypetalous corol is divided into the *claw* and *lamina;* which see.

PE'TAL-FORM, *petalifor'mis.* Resembling a petal in shape.

Petali'nus. Attached to, or being part of, a petal.

PE'TALOID, *petaloi'des.* Having petals, resembling petals.

PE'TIOLE, *petio'lus.* The footstalk of a leaf. Leaves which have no footstems are *sessile.*

PETIOLA'TE, PE'TIOLED, *petiola'tus.* Having a petiole.

Petiol'ulus. A partial petiole, which connects the leafet to the main petiole; as the butternut.

PHENOG'AMOUS, (of *phaino*, to shew.) Having the stamens and pistils sufficiently apparent for classification. Applied to all plants, not included in the class cryptogamia.

Phœni'ceus. Purple, dark-red.

PHYTOL'OGY. (*Phule*, a plant; *logos*, a treatise or discourse.) The science which treats of the principles of vegetables. It is nearly synonymous with the *physiology* of *vegetables.*

Pic'eus. Blueish-black, resembling dark pitch.

Pi'leus. The hat of a fungus. The top and most spreading part. It may be without stype, and thus constitute the whole ascending part. It always contains the seeds, though it requires the highest magnifiers to discover them in most cases. See Lamella.

Pilid'ia. See puffs.

PILIF'EROUS. Bearing hairs.

PILLAR. Columella. The column of a univalve shell.

PILO'SE, *pilo'sus.* Hairy. Having distinct straitish hairs. Pappus is pilose, or it is simple, when each hair is without any lateral branches. See aigrette.

Pil'us. A hair. An excretory duct of a bristly form, leading off a fluid. See sting.

PIM'PLED. See papulose.

Pin'na. A wing-feather. It is applied to leafets, which resemble feathers by their positions.

PIN'NATE, *pinna'tus.* Winged, or feathered. Leaves are pinnate, when distinct leafets are arranged along opposite sides of a simple petiole. See bipinnate and tripinnate.

PINNATIF'ID, *pinnatif'idus.* Cut-winged. Leaves are pinnatifid, when, instead of leafets as in pinnate leaves, segments or divisions of a leaf are along opposite sides of the midrib. Pinnate are compound, but pinnatifid are simple; because the divisions never reach the midrib. When pinnatifid leafets are on a pinnate leaf, it is called *pinnate-pinnatifid.*

PIS'TILLATE FLOW'ER. Having pistils only, without stamens; as the flower of the fertile cucumber.

Pis'til, *pistil'lum.* The central organ of most flowers. It generally consists of the germen, style and stigma. But the style is frequently wanting; then the stigma is seated on the germ, or sessile. The stigma receives pollen from the anther, and, in some manner not yet discovered, fertilizes the germ. Without this operation, no perfect seeds are produced. See flower, style and stigma.

Pistillif'erous. See pistillate.

Pitch'er-form. See urceolate.

Pith. The spongy substance in the centre of the stems and roots of most plants. Most woody stems have no appearance of a pith after they become old.

Pits, (syphellæ.) That kind of receptacle of lichens, which consists of open, cup-like, naked, white or yellow little spots, on the under side of the frond; which is generally downy. They are at first immersed, globose, minute dots, which at length burst with irregular margins, and discharge a powder.

Pit'ted. See lacunose.

Placen'ta. Fleshy receptacle.

Placenta'tion. The disposition of the cotyledons in the germination of the seeds.

Pla'ited. Folded somewhat like a fan, when nearly full spread. In foliation it is more closely folded.

Plane. Flat, with an even surface.

Pla'no-con'vex. Convex or roundish on one side and flat the other.

Plant. Any substance growing from seed. As tree, grass, puffball, mould. See vegetable.

Ple'nus-flos. See full-flowered.

Plica'tus. See plaited. Folded like a fan.

Plumo'se. Feather-like.

Plumo'se, *pap'pus.* Feather-like down. When a hair has other hairs arranged on opposite sides of it. Applied to a mineral having fibres diverging from a line or kind of midrib.

Plu'mula. The ascending part of a plant at its first germination.

Plu'rimus. Very many.

Pod. That kind of pericarp which is composed of two valves with the seeds attached to one or both sutures, or a longitudinal partition at the edges immediately adjoining the sutures. The pod is either a legume or silique.

Pode'tia. The peduncles of lichens, whether hollow or solid.

Poin'tal. See pistil. Central organs of a flower.

Poisers. Globules on slender stems under the wings of some dipterous insects.

Poi'sons. The definition of poisons and the manner of their operations has not yet been satisfactorily explained. It will here be no farther noticed, than as it respects vegetables. See natural orders, and p. 50.

Poi'sonous veg'etables. Persons of all descriptions have frequent occasion to make some use of plants, when they are not in a situation minutely to investigate their nature and qualities. As many plants are narcotic and injurious to the human constitution, it is very convenient to have at hand, or in the memory, a few concise rules on this subject. Such have been selected with great care, and set down at p. 50.

Pollen. See p. 5. On being viewed through a magnifier, they are found of various forms. In the sunflower, it is a prickly ball; in geranium, perforated; in comfrey, double; in mallows, a toothed wheel; in violet, angular; in daffodil, kidney-form, &c.

Pollin'ia. Rolls or masses of pollen, not included in cells of an-

thers of the common form and texture; as of the orchis, asclepias, &c.—Nuttall.

POLLINIF'EROUS. Bearing pollen.

POLYADEL'PHIA. (*Polus*, many; *adelphos*, brother.) See Rejected classes.

POLYADEL'PHOUS. Belonging to, or varying into, the class polyadelphia.

POLYAN'DRIA. (*Polus*, many; *aner*, male.) See p. 13.

POLYAN'DROUS. Belonging to, or varying into, the class *polyandria*.

POLYCOTYLED'ONOUS. Plants with more than two cotyledons. See cotyledon.

POLYGA'MIA. (*Polus*, many; *gamos*, marriage.) Many unions. The name of the twenty-third class as established by Linneus. It comprises all plants, which have some perfect flowers, and others which are staminate and pistillate, or both kinds. This class is divided into three orders. 1. *Monœcia*, having perfect flowers and either staminate or pistillate ones or both on the same plants. 2. *Diœcia*, having perfect flowers on some plants, and either staminate or pistillate flowers on others, of the same species. 3. *Triœcia*, having perfect flowers on some plants, staminate on others, and pistillate on others of the same species. This class, like the 18th, is abolished by Persoon and others, and the plants under it distributed among the other classes. President Smith thinks it ought to be discarded.

POLYG'AMOUS. Varying into, or inclining to, the class *polygamia*.

Polygo'nus. Many cornered, or many-angled.

POLYGYN'IA. (*Polus*, many; *gune*, female.) See p. 16.

POLYMOR'PHOUS. Presenting various forms and appearances.

POLYPET'ALOUS. Many-petalled. If the corol consists of more than one petal, it is polypetalous.

POLYPHYL'LOUS. Many-leaved. A calyx of more than one distinct piece is polyphyllous.

Polypre'nus. Enclosing more than one nut, or stone.

Polysper'ma. Many-seeded.

Polystach'ius. Many-spiked.

POME, *po'mum.* A pulpy pericarp without valves, which contains within it a capsule. See *berry*, and note the difference. Apples, quinces, &c. are pomes.

Pomif'erus. Bearing pomes, or apple-like fruit.

PO'ROUS, *poro'sus.* Full of holes, cellules, or tubular openings.

Porrec'tus. Lengthened out, stretched, straitened.

POSTERIOR SLOPE. See slope.

Præ'cox. Rare-ripe. Coming to maturity early in the season. Flowering before leafing.

PRÆMOR'SE, *Præmor'sus.* Bitten off. Terminating bluntly, as if bitten off. As the root of the pedate or birdfoot violet.

Pras'inus. Green, like a leek.

Praten'sis. Growing naturally in meadow land.

PREHENSILE. The tail of an animal, or other limb, formed for coiling around other bodies for the purpose of holding on by them.

Prem'ens. Pressing.

PRICK'LE. A sharp process fixed to the bark only, not to the wood; as on the raspberry, rose, barberry.

PRISMAT'IC, *prismat'icus.* Linear, with several flattish sides. A cylinder with flat sides.

Probos'cides. Proboscis-like. Resembling a projecting horn.

PROBOSCIS. An elongated nose or snout. It is a tubular process, whether a tubular continuation of the snout, as of the elephant, or a tubular sucker, as of the musquetoe, it is always adapted

to the structure of the animal in furnishing itself with food.

Proce'rus. Tall, elevated.

Proc'ess. A projecting part.

Procum'bent, *procum'bens.* Lying on the ground.

Profun'de. Deeply.

Prolif'erous, *pro'lifer.* Putting forth branches or flowers from the centre of the top of a preceding one.

Prom'inent, *pro'minens.* Standing out more or less beyond what is usual in other plants.

Promin'ulus. A little prominent.

Pro'nus-dis'cus. The under side, or back of a leaf, upwards.

Prop. See fulcrum. Tendrils and other climbers.

Propaga'tion. See flower. Extending plants by seeds, roots, &c.

Propa'go. See gemmatio.

Propa'gula. See efflorescence.

Propen'dens. Apparently on the point of falling.

Prop'er, *prop'erus.* See partial. Part of a whole.

Pros'trate, *prostra'tus.* See *procumbent* and *humifuse.* Lying on the ground.

Protru'ded. See exsert. Projecting out.

Protrusile. Capable of being protruded. It is applied to the heads of animals, which may be thrust out or forward, as that of the tortoise.

Prox'imus. Very near.

Prui'na. The mealiness or hoariness on plums, peaches, &c.

Pruinose. Covered with a frost-like meal.

Pru'riens. Hairs which excite itching.

Pseu'do. When prefixed to a word, it implies obsolete or false.

Pseudo-morphous. False faced. It is applied to crystals which are formed in, or upon, other crystals and take their form. As pseudo-morphous quartz crystals, are such as are formed in the inner castings of disintegrated cubic crystals of iron pyrites, or on the outside of calc spar, fluor spar, &c.

Pubes'cent, *pubes'cens.* Hairy, having hairs, wool, down, glandular hairs, &c.

Puffs, (pilidia.) That kind of receptacle of lichens, which consists of little round bordered knobs, whose disk finally turns to powder. It is at first covered with a membrane and often clothed with a fine grey hoariness. These receptacles are elongated below into a stalk fixed to the crust, but totally different from it.

Pul'lus. Dull brownish colour.

Pulp'y, *pulpo'sus.* Filled with a tenacious kind of parenchyma. Thick and succulent or spongy.

Pulver'ulent, *pulverulen'tus.* Turning to dust.

Pulvinatus. Cushion-like. Applied to the pileus of a fungus, which is thick and corky or spongy.

Pulvi'nuli, (garden beds.) Cushions. Excresences found on the surface of the fronds of some lichens, sometimes clustered or branched. Their use is unknown.

Pu'milus. Small, low.

Punch'ed. See perforated.

Punc'tate. Dotted or sprinkled with coloured, generally diaphanous, specks. See perforated.

Punctic'ulate. Having minute punctures.

Pun'gent, *pun'gens.* Sharp, piercing, pricking.

Punic'cus. Scarlet-coloured.

Pupa. Chrysalis, nymph, amelia. The quiescent state of an insect after passing from the larva state and before it becomes a perfect insect.

Purpuras'cens. Inclining to a purple colour.

Purpur'eus. Purple.

Pusil'lus. Low, small, diminutive

PUTA'MEN. Nut-shell. See nucleus.
Pyramida'lis. Conic, pyramid-form.
Pyrifor'mis. Pear-shaped.
PYRITIFEROUS. Bearing iron pyrites. Containing sulphuret of iron.

Q.

QUADRAN'GULAR, *quadrangula'ris.* Having four corners, or angles.
QUADRICAP'SULAR. Having four capsules.
Quadridenta'tus. Four-toothed.
Quadrifa'rius. Facing 4 ways.
QUAD'RIFID, *quadrifidus.* Four-cleft.
Quadriflo'rus. Four-flowered.
Quadrij'ugus. Four-paired.
Quadril'obus. Four-lobed.
Quadrilocula'ris. Four-celled.
Quadriner'vis. Four-nerved.
Quadriparti'tus. Four-parted.
Quadrival'vis. Four-valved.
Quadrivascula'ris. Four cup-form cells.
QUAL'ITIES OF PLANTS. Richard says that plants of the same taste and odour, are generally possessed of similar qualities. Also that the smell and taste are always the same. He divides the odours of plants into, 1. *Fragrant.* 2. *Aromatic.* 3. *Ambrosiac* (resembling amber.) 4. *Alliaceous* (resembling garlic.) 5. *Fetid* (as asafœtida, &c.) 6. *Nauseous* (causing the stomach to heave.) As the fragrant, the aromatic and ambrosiac, are always free from all hurtful qualities, and as the fetid and nauseous are generally poisonous; it seems that mankind have in some measure an instinctive principle by which their food is to be selected.
Quater'nus. Four together in a whorl.
Qui'nus. Five together in a whorl.
QUI'NATE, *quina'tus.* Five leafets on one petiole.
Quinquangula'ris. Five-cornered. When a leaf has five points; as the cucumber.
Quinquecapsula'ris. Having five capsules.
Quinquecos'tate. Five-nerved.
Quinquef'idus. Five-cleft.
Quinqueflo'rus. Five-flowered.
Quinquej'ugus. Five-paired.
Quinquel'obus. Five-lobed.
Quinquelocula'ris. Five-celled.
Quinquener'vis. Five-nerved.
Quinqueparti'tus. Five-parted.
Quinqueval'vis. Five-valved.
Quinquevascula'ris. Five cup-form cells.

R.

RACE'ME, *race'mus.* (*Rax*, a bunch of grapes.) That kind of inflorescence, wherein the florets have undivided pedicels arranged along the sides of a general peduncle. As currants.
RACE'MED, *racemo'sus.* Flowers in racemes.
RAC'HIS, (*Rachis*, the back-bone.) The filiform receptacle connecting the florets in a spike. As in wheat-heads. It is sometimes put for the midrib in ferns.
RA'DIAL. Belonging to the ray.
RA'DIATE, *radia'tus.* The spreading florets around the margin of a compound flower. It is also applied to a division of animals; as the animals inhabiting coral rocks and sponges.
RADIATED ANIMALS. Those whose sentient principle resides in a medulary globule, spheroid, or ring, with radiating branches; as the polypus which inhabits coral rocks, the tape-worm, &c.
RAD'ICAL, *radica'lis.* Proceeding from the root without the intervention of a stalk. As the leaves of plantain.

Ra'dicans. See rooting. Roots proceeding from stems, leaves, &c.

Radica'tus. Sending off roots.

RAD'ICLE, *radic'ula.* The little fibrous branches proceeding from the main root; which imbibe the moisture and other nourishment for the plant.

Rad'ius. See ray. Edging florets.

Ra'dix. See root.

RAG'GED. See squarrose.

Ramen'tum. Applied to the loose scales frequently in the angles of petioles, &c. called in English, *raments.*

Ra'meum fol'ium. See branch leaves.

Rami'ferus. Producing branches.

Ramossis'simus. Very branching.

Ramo'sus, RAMO'SE. Branching.

Ra'mulus. See branchlet. Little branch.

Ra'mus. See branch.

Rariflo'rus. Flowers few and distant.

Rarifol'ius. Leaves few and distant.

RAY. The outer margin or circumference of a compound flower. It is also applied to the peduncles and outer florets of an umbel; particularly when they differ in any respect from the inner, or disk, florets. Also to the bony spines of the fins and gill-membranes of fish.

RA'YED. Having rays.

RECEP'TACLE, *recepta'culum.* The base by which the other parts of the fructification are connected and supported; being the end, or at the end, of the peduncle. It is considerably used in the generic characters of compound flowers; but very little noticed in any others. Perhaps this part may hereafter be noticed on account of the change, it in some way produces on the vegetable secretions. Dr. Smith mentions the wholesomeness of some fruits, while the other parts of the plant are poisonous. See page 392. Every one has noticed the delicate flavour of the pond-lily, (Nymphea odorata,) while all back of the receptacle is extremely different. Numerous similar instances may be cited to prove the very great change in some way effected by the receptacle. When Persoon applies receptacle (receptaculum) to a capsule, he intends the columella.

RECLI'NED, *reclini'tus.* Bent down so that the apex of a leaf, &c. is lower than the base. Applied to the stem it implies that it is bowed towards the earth.

Recompos'itus. Twice compound.

Recon'ditus. Concealed.

Rectius'culus. Straitish.

Rec'tus. Strait.

RECUR'VED, *recurva'tus.* Curved downwards.

Recuti'tus. Appears as if peeled.

REFLEX'ED, *reflex'us.* Bent back, nearly or quite to touch the stem or peduncle.

REFRAC'TED, *refrac'tus.* Bent back in an angular form, so as to appear as if broken.

Reg'num veget'abile. The *vegetable kingdom* as taken into view with the *animal* and *mineral.*

REG'ULAR, *regula'ris.* See equal.

REJECTED CLASSES. Linneus distributed all plants into 24 artificial classes; but his eleventh, eighteenth and twenty-third classes, are considered by many botanists, as very inconstant in their character. In the annexed Grammar of Botany, they are omitted, and the plants of each are distributed among the other classes.

The *rejected classes* being retained by Muhlenberg, Bigelow, and some other distinguished botanists, they are defined here.

Dodecandria, the 11th class of Linneus.

It includes those plants whose flowers are perfect, and contain from twelve to nineteen stamens to each; as the wild ginger, purslane, agrimony, and houseleek.

Polyadelphia, the 18th class of Linneus.

It includes those plants whose flowers are perfect, and contain stamens united by their filaments in more than three parcels; as the St. John's wort.

Polygamia, the 23d class of Linneus.

It includes those plants whose flowers are perfect and staminate or pistillate on the same plant, or on different individuals of the same species; as the ginseng, itch-weed, maple tree, ash tree, and peperidge tree.

REJECTED ORDERS. Some of the artificial orders of Linneus are omitted in the annexed Grammar of Botany, and their plants distributed among other classes and orders. They are the following:

Monogamia, the 6th order of Linneus in the class Syngenesia.

It includes those plants whose flowers are perfect and not compound, and contain stamens with united anthers; as the lobelia and touch-me-not.

Monoecia, *Dioecia*, and *Trioecia*, are the three orders of the rejected class Polygamia. The order *monoecia* includes those plants, which comprise all that is necessary for the character of the class in one plant—*dioecia*, in two plants—*trioecia*, in three plants.

The orders between *decagynia* and *polygynia*, also beyond *monadelphia*, are unnecessary. Their definitions are implied under their associate orders.

REL'ATIVE PROPO'RTIONS. When dimensions are expressed indefinitely, as long, very long, short, large, &c. such expressions are to be understood as long, &c. compared with the proportion which similar parts usually bear to other parts, in plants generally. But when such terms are used for specific names, the proportion between the parts of species of the same genus, which were known when the names were given, are compared. Thus *Kalmia latifolia* has a broader leaf than *Kalmia angustifolia*; but it has a narrow leaf compared with any species of *trillium*.

REMO'TE, *remo'tus*. See relative proportion.

RE'NI-FORM. See kidney-form.

REPAND', *repan'dus*. Having small sinuses, separated by teeth in the form of segments of small circles. Spread.

Re'pens. See creeping.

REPLACEMENT. Applied to a crystal when its angles or edges are wanting, and are supplied by a plane face or other angles.

Rep'tans. See creeping and runner.

Res'tans. See permanent. Remaining.

Resupina'tus. Upside down.

RETIC'ULATE. Netted. Having veins crossing each other like net-work.

RE'TI-FORM. Net-form, net-like.

RETRACTILE. When the head, or other organ, may be drawn back, as the drawing in of the head of a tortoise.

RET'ROFLEX, *retroflex'us*. Bending in various directions.

Retrofrac'tus. See refracted. Bent suddenly back.

Retror'so-denta'tus. See runcinate. Teeth bent back.

RETU'SE, *retu'sus*. Ending in a sinus generally hollowed out but very little. See emarginate.

REVER'SED. Bent back towards the base.

REV'OLUTE, *revolu'tus*. Rolled outwards. A term in foliation;

applied to leaves whose opposite margins are rolled outwards and continued rolling, till the two rolls meet on the back of the midrib and parallel to it. It is the reverse of *involute*.

Rhizosper'ma. Fruit on the root of some ferns.

Rhom'bic, *rhom'beus.* See deltoid. Diamond-form.

Rhomboi'deus. Diamond-spot like.

Rib. A nerve-like support to a leaf.

Rib'bed. When the midrib sends off lateral ribs nearly strait to the margin. It is sometimes put for *nerved*.

Ric'tus. See gape. Opening of the mouth.

Rig'id, *rig'idus.* Stiff, inflexible, or not pliable ; or, if attempted to be bent, will rather break.

Rimo'se, *rimo'sus.* Chinked, abounding in cracks, as the outer surface of the pitch-pine tree.

Ring. The band around the capsules of ferns, which is elastic. See exanulatus.

It is also the thin membrane attached to the stem of a fungus. When young it is attached to the pileus. It is *erect* when the upper edge is not fastened —*inverse*, when the lower edge is not fastened—*sessile*, when it is attached by one side only—*mobile*, when it may be pushed up and down—*persistent*, when it is as durable as the pileus—*fugacious*, when it disappears at the opening of the fungus.

Rin'gent, *rin'gens.* See labiate. Grinning.

Ri'sing. See assurgens.

Root. The descending part of a vegetable, which enters the earth, or other substance, in search of nourishment for the plant. Roots are *annual*, *biennial*, or *perennial*. See ages. They are branching, fibrous, creeping, spindle-form, tuberous, bulbous, or granulated. See each term in its place.

Root'ing. Bending or extending to the earth and striking root.

Root'-leaf. See radical.

Root'let. A fibre of a root.

Ro'ridus. Humid. Appearing as if covered with dew.

Rosa'ceous. A corol formed of roundish spreading petals, without claws or with extremely short ones.

Ros'eus. Rose-coloured.

Ros'tel, *rostel'lum.* That pointed part, which tends downwards at the first germination of the seed. See corcle.

Rostra'tus. See beaked. Having a bill.

Ro'tate, *rota'tus.* See wheel-form.

Rotun'dus. Round. Without angles.

Rough. Covered with dots, which are harsh to the touch, but not apparent to the naked eye. See rugged.

Round. See rotundus. Circular.

Ru'bra. Red.

Rubigino'sus. Rust-coloured.

Rudera'lis. Growing among rubbish about buildings, &c.

Ru'fous. Reddish yellow.

Rug'ged. Covered with invisible dots, which are harsh to the touch. See rough.

Rugo'se. Wrinkled. Veins more contracted than the disk, so that the intermediate pyrenchyma rises up between them.

Run'cinate. Pinnatifid, with the divisions pointing backwards ; as the dandelion.

Run'ner. A shoot producing roots and leaves at the end only, and from that place giving rise to another plant.

Rupes'tris. Growing naturally among rocks.

Rutilus. Shining, bright, glossy.

S.

Sa'ere-form. See acinaciform.

Sac'cate. Furnished with a little bag. Bag-like.

Sag'ittate, *sagitta'tus*. See arrow-form.

Saliferous. Salt bearing. Applied to a secondary rock in which salt springs are found.

Sal'sus. Salt-tasted.

Sal'ver-form. A monopetalous corol with a flat spreading limb proceeding from the top of a tube.

Sam'ara. A winged pericarp not opening by valves; as the maple.

Sam'aroid. Resembling a samara, or winged capsule.

Sap. The watery fluid contained in the tubes, and cellules of vegetables, which furnishes the means, or is itself, the support of their growth and life, and their preservation from decay. That part of the sap which supplies materials for the growth, foilage and fructification, evidently ascends by way of the *camb*. See camb. But that, which fills the interstices among the woody fibres, and serves to preserve them from decay, is probably raised by capillary attraction. Freezing and thawing in some way or other suspends for a day or two the effect of capillary attraction It then descends by its natural gravity; at which season only can the sap be obtained from the sugar maple. That it descends is evident from the fact, that no sap is obtained from below the incision, except a few drops at the first moment after it is made. That the sap descends from the woody fibres and not from the camb appears from inspection. That this sap serves only to preserve the wood appears from the rapid decay of the wood in the sugar maple directly above the incision to the whole extent of the bole; while the incision produces but little effect below it. And the herbage of the tree with the outer layers of wood continue as flourishing after the tree has been drained of its sap annually for half a century, as its neighbours, which have never lost any sap. It may be observed further; that sap can never be drawn from the same vessels above the incision where it has been drawn in any preceding year; unless a new incision be made several feet above the old one. Nor even then, if the preceding draining had been very considerable, or, in other words, if the sugar-making season had been very favourable, and the incision large.

Sapin'dus. Having some kind of taste.

Sap'or. Having a relish, pleasant, any taste. Colour sometimes indicates the taste. White berries are generally sweet; red, sour; blue, sweet and sour; black, insipid and poisonous—Willdenow. But certainly our spicy wintergreen (gaultheria,) partridge-berry (mitchella,) and whortleberries (vaccinium,) are exceptions to Willdenow's rules.

Sarmento'se, *sarmento'sus*. A running shoot, which strikes root at the knots or joints only. Generally applied to shrubs. See runner.

Sau'cer-form. Shaped like a common tea-saucer.

Scab'er, scabrous. See rough.

Scabrit'ies. Roughness.

Scal'loped. See repand.

Sca'ly. Covered more or less with scaly appendages, as fern roots; or consisting of substances, in some measure resembling

coarse fish-scales; as the scales of lily roots.

Scan'dens. See climbing.

SCANSORAL. Having feet formed for climbing—two toes forward and two backward.

SCAPE, *scap'us.* See peduncle. Flower stem from the root.

SCAPULARS. The feathers, which descend down each side of the back.

SCA'RIOUS, *scario'sus.* Dry and membranous, generally transparent.

SCAT'TERED. Standing without any regular order; that is, neither opposite, alternate, nor in any definable series.

SCHISMATOP'TERIDES. Dehiscent ferns. One of the new orders of ferns. It is adopted by Pursh, Torrey, &c. Osmunda, lygodium and schizæa are placed here.

SC'ION. Shoots proceeding laterally from the roots or bulb of a root.

SCO'RED. See sulcate. Furrowed.

SCRAG. Back of a bird's neck.

SCROBIC'ULATE, *scrobicula'tus.* Deep round pits on the receptacle gives it this name.

Scutel'læ. See shields.

Scutellatus. See saucer-form.

SCYM'ITAR-FORM. See acinaciform. Cutlass-form.

Scyph'ifer, Scyph'us. Cup-bearing. See cyathiform.

SEC'TION. The genera of some orders and the species of some genera are divided into sections. Sections judiciously constructed greatly facilitate the investigation of plants. But they often mislead; and must be sometimes disregarded, and the whole order read over; especially under those orders which are made up of natural families. See the orders *siloquosa* in the class *tetradynamia* of Linneus's system.

Secun'dus. Turned to one side. One-sided, one-ranked.

SEED. The matured part of fructification, destined for the reproduction of the species. It contains the rudiment of a new plant and is analogous to the egg of animals. It consists of the corcle, cotyledons, tegument and hilum; which see.

SEE'D-BUD. See germen.

SEE'D-COAT. See aril. Shelly covering of seeds.

SEE'D-LEAVES. The cotyledons expanded into leaves.

SEE'D-LOBES. See cotyledons. Fleshy part of seeds.

SEE'D-VESSELS. See pericarp. Covering of seeds.

SEG'MENT. The parts into which a calyx, corol, leaf, &c. is divided or cut.

SEGREGA'TA polygamia. See p. 18.

Se'jugus. Six-paired.

Se'men. The seed.

Semiamplexicau'lis. Half easping the stem.

SEMICOLUM'NAR. See semiterete. Tapering half cylinder.

Semicylindra'ceus. Half-cylindric. In form of a round ruler split lengthwise.

Lemiflos'culus, SEMIFLO'RET. See ligulate. Strap-like.

Semi-in'ferus. Half-inferior. When the calyx grows on the side of the germ, so that it is neither superior nor inferior.

Semina'lis. See seed-leaves. Cotyledonous leaves.

Semina'tio. The sowing of seeds.

Seminif'era. Bearing the seed.

SEMIORBIC'ULAR, *semiorbicula'tus.* In form of a half circle.

Semiquinquef'idus. Half 5-cleft.

Semisagitta'tus. Half arrow-form. That is, one side wanting; as in the *vicia pusilla.*

Semisex'fidus. Half 6-cleft.

SEMITER'ETE, *semiter'es.* Half terete. See terete.

Semper'virens. Living through

the winter and retaining the leaves.

Se'nus. Six-fold. Growing in sixes.

Sen'silis, SEN'SITIVE. Moving on being touched. See irritability.

Sensim. Gradually, by little and little. Applied to a form, &c. which arises gradually from some other form.

SENTIENT PRINCIPLE. The knowing principle. That faculty by which animals are enabled to take notice of external objects.

SEP'ALS. The divisions of a calyx, or corol. *Raf.*

SEPTIF'EROUS. Supporting partitions.

Seria'tus. In a row, or in rows.

Seric'eus. Silky. Covered with soft close-pressed hairs.

Seroti'nus. Coming to maturity late in the season. Applied to willows, and to some other plants, it implies, that the time of flowering is after the leafing.

SER'PENTINE MAR'GIN. See repand. Waving edges.

SER'RATE, *serra'tus.* (*Serra*, a saw.) Having sharp notches, appearing as if cut, about the edge or margin, pointing towards the apex.

SER'RULATE, *serrula'tus.* When a serrate leaf has the teeth serrate again. It is also applied to any serratures, which are very fine.

Sesquial'ter. When a large fertile floret is accompanied by a small abortive one.

SES'SILE. Sitting down. When a leaf, flower, seed-down, pileus of a fungus, receptacle of a lichen, &c. are destitute of a petiole, peduncle, stipe, &c.

Se'ta. A bristle.

Seta'ceus. Bristle-form. Applied to antennae.

Setig'erous. Bearing bristles.

Seto'sus, SETO'SE. Bristly. Having the surface set with bristles, or stiff strait hairs.

Sexangula'ris. Six-angled.

Sex'fidus. Six-cleft.

Sex'florus. Six-flowered.

Sex'jugus. Six-paired.

Sexlocula'ris. Six-celled.

Sex'us. Sex. When Linneus first adopted the stamens and pistils as the organs of classification, he addressed his arguments to physicians, who were conversant with animal anatomy. He therefore took advantage of the analogy between animals and vegetables in the reproduction of their kind, in order to illustrate his theory. He called the stamens males, and the pistils females, &c. But nothing can be more ridiculous and disgusting than to keep up these references at this day.

Sexval'vus. Six-valved.

SHAFT. See style. A name for the central organ of a flower.

SHAG'GY. See hirsute. Rough tangled hair.

SHARP. Tapering to a point. Acute differs from sharp, as it may apply to the tip of a leaf, which becomes broad immediately back of the point.

SHEATH. The prolongation of a leaf down the stem, which it encloses; as in most culmiferous plants.

SHE'ATHED. Having a sheath.

SHIELDS, *scutel'læ.* That kind of receptacle of lichens, which is open, orbicular, saucer-like. The under side and border are of the substance and colour of the frond. The disk is of a different colour and substance from the border and frond, containing the seeds in extremely minute vertical cells. The shields are thick and tumid, when they are sessile; and membranous, when stalked or elevated. Very rarely they are perforated in the centre.—Smith.

SHI'NING. See lucidus.

SHOOT. Each tree and shrub sends forth annually a large shoot in

the spring, called the *spring shoot;* and from the end of that a smaller one about the 24th of June, called St. John's shoot. There is always the appearance of a joint where the latter springs out, very perceptible after the whole shoot is matured.

SHRIV'ELLING. See withering.

SHRUB. A vegetable with a woody stem. It is generally put for that kind of woody plant, whose stem divides into branches near the ground, without being elevated by a bole, like trees. See tree and suffrutex.

SHRUB'BY. Having woody stems or branches.

Sic'cus. Dry, neither humid nor succulent.

SICK'LE-FORM. A very much curved keel.

SIDES. Applied to shells means the right and left, when viewed from the front, (opening side) or back.

SIL'ICLE, *silic'ula.* A little silique, whose length and breadth are nearly equal.

SILICULO'SA. See p. 16.

SI'LIQUE, *sil'iqua.* See p. 5.

SI'LIQUE-FORM. Shaped like a silique without its essential character.

SILIQUO'SA. See p. 17.

SIL'KY. See sericeus.

SIM'PLE, *sim'plex.* Undivided. Single, opposed to compound, aggregate, or branched.

Simplicis'simus. Very simple.

SIN'GLE. Only one. Also opposed to full-flowered.

Sinistror'sum. Twining from right to left, that is, contrary to the apparent motion of the sun; as the pole-bean.

SIN'UATE, *sinua'tus.* (*Sinus*, a bay.) Having rounded incisions. The margin hollowed out, resembling a bay; as the white oak leaf.

SIN'UATE-SER'RATE. Having serratures hollowed out; as the chestnut.

SI'NUS. A roundish incision into the edge of a leaf or other organ.

SIPHUNCULUS. A canal, or succession of perforations, connecting the chambers of some univalve spiral shells.

SIT'TING. See sessile.

Si'tus. Situation; as opposite, alternate, &c.

SLEEK. See glabrous.

SLEEP OF PLANTS. The effect of night upon the external appearance of some plants; as the leaves of peas closing over the very young flowers.

SLEN'DER. See tenuis.

SLOPES. The edges of an oblique bivalve shell. *Anterior slope*, is the edge in which the ligament is situated. *Posterior slope*, is the edge in which the beaks of the shell turn forward; being the edge opposite to that in which the ligament is situated.

Smarag'dinus. Grass-green.

SMOOTH. Sometimes put for glabrous, but not synonymous with it. For glabrous means sleek or slippery; whereas smooth may be applied to fine chamois leather.

SOBOLIF'EROUS. Bearing shoots.

SOL'ID, *sol'idus.* Of an uniform substance, not naturally partible; as the turnip. See coated and scaly.

SOL'ITARY, *solita'rius.* Standing alone, or very distant from others of the same kind.

Solu'tus. Disengaged. Not adnate, or growing together.

SOMEWHAT. Used as a diminutive; implying in some degree, not fully. President Smith translates *sub*, by *somewhat*, when combined with an adjective; as *subtrifidus*, somewhat three-cleft.

Somnus planta'rum. See sleep of plants.

Sor'dide al'bicans. Dirty white.

So'rus and *Sore'dia.* See fruit-dots. Clusters of the fruit of ferns.

Spadi'ceus. Chestnut brown.

SPA'DIX. An elongated receptacle proceeding from a spathe, or resembling such in texture and appearance.

SPAN'GLES, *patel'lulæ.* Open and orbicular, like shields, but sessile and not formed of any part of the crust, from which they differ in colour, being most usually black. The seeds are lodged beneath the membrane that covers their disk, as in the former, and the disk is surrounded by a *proper* border. Their seeds are observed to be naked in the cellular substance of the disk, not enclosed in cases. Disk sometimes concave or flat, oftener convex, and even globose without any apparent border when in an advanced state.

Spatha'meus. A span high, or a span long.

SPA'THE. That kind of calyx, which first encloses the flower and after it expands is left at a distance below it. As daffodil, onion, Indian turnip.

SPA'THE-FORM. Resembling a spathe.

SPAT'ULATE, *spatula'tus*, or *spathula'tus.* Roundish and diminishing into a long, narrow, linear base.

SPE'CIES. The lowest division of vegetables. There have been about forty-five thousand species described. In North America about four thousand phenogamous species have been described; of these about twenty-five hundred are found to the north and northeast of Virginia. De Lamark and De Candolle make 4866 species of plants in France, including the cryptogamia. In the year 1822, in the third edition of the Manual of Botany for the states north of Virginia, 3065 species were described. Common cultivated exotics and some cryptogamous plants are included in this number. About one thousand phenogamous species have been examined by Professor Ives in a wild state, within five miles of Yale College. Very few places of the same extent will afford more than eight hundred, and few less than six hundred, in the Northern States. Phelps gives a catalogue of thirteen hundred and forty phenogamous species as a complete list of all the British plants.

SPECIF'IC CHAR'ACTER. See diagnosis and descriptions.

SPECIF'IC NAME. In common use we apply this to what Linneus called the *trivial name.* The specific name he calls all those several descriptive words, which express the essential difference, or diagnosis.

The rage for changing specific names has become a great nuisance to the science. Richard proposes the establishment of a *literary tribunal*, having authority to fix the names in every department of science for the whole globe; in order to check the growth of this child of vanity and ignorance.

SPHA'CELATE. Withering, becoming blackened.

SPHAGNO'SE. Wet, mossy, swampy.

SPHERULE. Small globules of nearly a regular spherical form.

Spi'culus. See spikelet.

SPIKE, *spi'ca.* Having florets arranged along the sides of a general elongated peduncle or receptacle, without partial peduncles, or with extremely short ones. As a wheat-head, or mullein.

SPI'KELET, *spi'cula.* One of the subdivisions of a spike.

SPIN'DLE-FORM. See fusiform.

SPINE, *spi'na*. See thorn.

SPINES'CENT, *spines'cens*. Becoming thorny.

SPINO'SE, *spino'sus*. Thorny.

SPI'RAL, *spira'lis*. Twisted like a screw.

SPIRE. Is applied to all the whorls of a univalve shell, which extend upwards above the first whorl, called the body or belly of the shell.

SPIT-POIN'TED. Barton substitutes this for cuspidate.

Spith'ama. Short span. See measures.

Spongio'sus. Spongy.

Spor'æ. The seeds of lichens.

Sporan'ginum. A name given to the pericarp by Hedwig.

Sporangid'ium. Willdenow's name for the columella of mosses. See columella.

SPOT'TED. Having spots differing in colour from the principal part.

SPREAD'ING. See patens.

SPUR. An elongated process from the base, or from near the base of the calyx or corol or nectary, somewhat resembling a horn or cock's spur. As the Larkspur, Orchis and Nasturtion.

SPUR'RED. Having a spur, or process from the base.

SPUR'RED-RY'E, OR SPUR'RED-GRA'IN. An enlarged, elongated seed, projecting out of a glume, of a black or violet colour, brittle texture, somewhat spur-form. It is that morbid swelling of the seed, called ergot by the French. The black or dark coloured kind is called the *malignant ergot*. "Large doses of which cause head-ache and febrile symptoms. Under proper regulations it may be considered a valuable addition to the present stock of medicinal agents. The dose usually administered is from ten grains to half a drachm, in decoction." Bigelow. The pale violet kind, called *simple ergot*, is harmless and inactive.—Willdenow.

Grain growing in low moist ground or new land, is most subject to it. Also spring grain more than winter grain; and rye more than wheat, barley or oats.

When crops are so much infected with it as greatly to injure them, the loss may be in a great measure made up by collecting the ergot, and selling it to druggists. It should be thoroughly winnowed out of the grain, as it is said to be very injurious in bread. The ergot may then be collected from the chaff.

SQUAMI-FORM. Of the form of scabs or scales.

SQUAMULO'SE, *squamo'sus*, or *squama'tus*. See scaly.

SQUARRO'SE, *squarro'sus*. Ragged. When the points of scales, &c. bend outwards, so as to make a ragged appearance. It is also used for scurfy, or when covered with a bran-like scurf.

STACHYOP'TERIDES. Spiked ferns. One of the new orders of ferns. It is adopted by Pursh and others. Lycopodium, Botrychium, Bernhardia and Ophioglossum are placed here.

STALK. See stem.

STA'MEN. See p. 3.

STAM'INATE. Having stamens only, without a pistil. See p. 6.

Stamin'eus. Having no corol, the stamens serving in its stead.—Ray.

Staminif'erous. See staminate. Bearing stamens only.

STAN'DARD. See banner. Upper petal of pea-flowers.

STEL'LATE, *stella'tus*. Spreading out in a radiate manner. Leaves are stellate, when three or more surround the stem in a whorl. Flowers and the volva of a fungus are stellate, when the petals or segments spread out, so as to

resemble the vulgar representation of a star.

STEM. The main base or supporter of the fructification and herbage. It is either Tige, Culm, Scape, Peduncle, Petiole, Frond or Stipe; which see.

STEM-CLAS'PING. See clasping.

STEM'-LEAF. Inserted on the stem. See cauline.

STEM'LESS. Having no stem.

STEMMATA. Small globules, often lucid, resembling eyes. They are generally three in number on the top of the head.

STER'ILE, *ster'ilis*. Barren flower. Staminate flower.

STIFF. See rigid.

STIG'MA. The top of the pistil. It is generally moist when in full perfection, for the better reception of the pollen.

STINGS, *stim'uli*. Hair-like processes, which excite itching punctures; as on the Nettle. They are generally hollow with a sack at the base, containing an acrid liquor. By pushing against their points, the sacks are compressed, and thrust out the liquid.

STIPE, *sti'pes*. The lower part of the midrib of a fern; the stem of a fungus; or the stem of the down on the seeds of Dandelion; the stem of a germ elevating it above the receptacle; or any other stem-like organ, not otherwise particularly named.

STIP'ITATE, STI'PED, *stipita'tus*. Having a stipe.

STIP'ULE, *stip'ula*. A leafet or scale at or near the base of a petiole, which in some respect differs from the leaves.

STIP'ULAR, *stipula'ris*. Formed of, or connected with, stipules.

STIP'ULED, *stipula'tus*, or *stipula'ceous*. Having stipules.

tol'o. See sucker.

Stolonif'erus. Putting forth suckers, or shoots.

STRAD'DLING. See divaricate.

STRAIGHT, or STRAIT. In nearly a right line.

STRA'ITISH. A little curving, but not sufficiently to take the appellation of curved.

Stramin'eus. Straw-coloured; straw-like.

STRAP'-FORM. See ligulate.

STRATUM. A layer. It is applied in a general or partial sense. A general stratum of rock, or of detritus, may include several partial strata. These partial strata, or sub-strata, should be called layers, to avoid circumlocution and confusion.

Stra'tum prolig'erum. The seed-bearing disk of the receptacle of lichens.

STRIAE. Marks or lines on minerals, on elytra of insects, &c.

STRI'ATE, STRE'AKED, *stria'tus*. Marked or grooved with slender lines.

Stric'tus. Both stiff and strait, or perfectly strait. See erect.

Strictis'simus. Very stiff and strait.

STRIGO'SE, *strigo'sus*. Armed with small, close, rigid bristles, which are thickest below.—Willdenow.

Strobila'ceus. In form rasembling a strobile.

STRO'BILE, *strob'ilus*. An ament with woody scales; as the fruit of pine.

Strobilifor'mis. See strobilaceus.

STROMA. The layer or covering of some fungi.

STYLE, *styl'us*. (*Stulos*, a column.) That part of a pistil, which is between the germ and stigma. It is often wanting; as in the Tulip.

Sty'loid. Resembling a style.

Sua'vis. Sweet, agreeable.

Sub. Used in combination as a diminutive. See somewhat.

SUBERO'SE, *subero'sus*. Corky.

SUBMER'SED, *submer'sus*. Growing under water.

Subter'raneus. Growing and flowering under ground. This may

be applied to the shoots of the Polygala rubella.

Sub'tus. Beneath.

Sub'ulate, *subula'tus.* See awl-form.

Subuniflo'rus. Generally one-flowered, but sometimes more.

Succulen'tus, suc'culent. Juicy, abounding in juice. It is also applied to a pulpy leaf, whether juicy or not.

Suc'cus. See sap.

Suc'ker. A shoot from the root by which the plant may be propagated.

Suffru'ticose, *suffru'tex.* An under-shrub. A plant whose branches annually die, but the lower part of the stem is woody and remains, as the *Spirea alba,* white steeple-bush; also Sage.

Suffrutico'sus. Undershrubby.

Sul'cate, *sulca'tus.* Furrowed. Marked with deep lines.

Sulphur'eus. Sulphur-coloured.

Sup'erans. Exceeding in height.

Superax'illary. Above the axil.

Superdecompound'. See supradecompositus.

Superfic'ies. See pagina.

SUPER'FLUA polyga'mia. See p. 18.

Super'ne. Upwards, towards the top.

Supe'rior, *sup'erus.* A calyx or corol is superior when it proceeds from the upper part of the germ. See germ.

Supi'nus. Face upwards. See resupinatus. Upside down.

Suppo'rt. See fulcrum.

Supra-axilla'ris. See suprafoliaceus.

Supradecompos'itus. More than decompound; which see. When a petiole is divided and the divisions divided at least once more, and the last divisions have leafets.

Suprafolia'ceus. Inserted above the axil, or base, of the leaf.

Sur'culus. A little branch or twig. Applied to the stem or shoot which bears the leaves of mosses.

Su'ture, *sutu'ra.* A seam-like appearance at the meeting of two parts; as the valves of pea-pod, the parts of a skull, &c.

Swim'ming. See natant.

Sword'-form. See ensiform.

Sylvati'cus. Growing in woods.

Sylves'tris. Altogether wild; growing in wild woods.

Syngenesious. (*Sun,* together; *genesis,* springing up.) Anthers growing up together in an united tubular set. It is applied to all those plants, whose flowers are compound, having the anthers in each floret with more or less of their edges adnate; so that the whole (which are always 5) form a tube. See p. 14.

Syno'nyms, *synon'yma.* Different names for the same plant.

Synop'sis. A condensed systematic view of a subject, or science.

Sys'tem, *syste'ma.* An arrangement of natural bodies according to assumed characters; for the purpose of aiding the mind and memory in acquiring and retaining a knowledge of them, systems have been proposed in abundance. And we are still infested with system-makers and reformers, which are among the greatest evils incident to Natural Science. Any man of ordinary talents may make a tolerable system in half a day; that is, sixty systems per month.—But why not adhere to that which is universally known and established? There may be improvements in the Linnean system. But let them be adopted with caution, and on the authority of the oldest and most experienced botanists.

T.

Tænia'nus. Ribbon-form. Tape-form.

TAIL. A filiform process terminating a seed, &c. As the Virgin's bower.

TAIL-COVERTS. A clump of feathers above the tails of birds, adjoining the bases.

TAIL-FEATHERS. The large feathers of the tails of birds—generally either 10, 18, 20, or 24—but 12 is the most common number.

Tale'a. Sucker.

TA'PERING. See attenuatus.

TAR'GETS, *pel'tæ.* That kind of receptacle of lichens which is flat, close-pressed, and attached to the frond by its whole underside, as if glued; sometimes attached to the bark of the frond. It is broad, kidney-form, or oblong, rarely irregular; covered with a thin coloured disk, with no border except occasionally a very minute accessory one, which seems to circumscribe it. In an early stage it is concave, and concealed by a thin gelatinous fugacious membrane, or veil.—Smith.

TAR'GET-FORM. See peltate.

TARSUS. The ancle and foot of an insect, excepting the hook or claw at the extremity.

TASTE. See sapor.

TECTRICS. Wing coverts. The longest feathers of a bird's wing, next above the quills. *Minor tectrics* are sometimes found above the larger.

Tec'tus. Covered.

TEETH OF MOSSES. The outer fringe of the peristomium is generally in 4, 8, 16, 32, or 64 divisions, which are called teeth. See peristomium.

Teg'ens. Covering.

TEG'UMENT. The skin or bark of seeds; as appears very distinct on a boiled pea or bean.

TEM'PERATURE. The degree of heat and cold to which any place is subject. This is not limited to degrees of latitude; as high mountains in Pennsylvania produce many plants, most natural about Hudson's bay. In cold regions white and blue petals principally prevail; in warm regions red and other bright strong colours.

In the spring season white petals predominate; towards autumn the yellow are most prevalent.—Willdenow.

TEN'DRIL. That kind of appendage, which is filiform and reaches out to grasp bodies to climb by. As the climbers of grapes and peas.

Tenel'lus. Tender, delicate and fragile.

TENTACULA. The arms, or feelers, of insects, and of other animals.

Tenuifol'ius. Slender-leaved.

Ten'uis. Thin and slender.

Ter'es. See terete. Tapering cylinder.

TER'ETE. Round, columnar, and tapering from the base to the other end.

Teretius'culus. Somewhat terete.

Tergem'inus, TERGEM'INATE.—Thrice paired. The petiole is forked, these branches forked, and the last branches with paired leafets.

TERMS. Technical terms should be defined in a dictionary of each science and art. But words used in their common acceptation, whether Greek, Latin, English, French, &c. should not be defined in such a dictionary, however frequently applied in such science or art.

TER'MINAL, *termina'lis.* Proceeding from, or occupying, the end of a stem, branch, style, &c.

TERMINA'TIONS. In expressing resemblances it would greatly

lengthen descriptions to introduce words drawing full-length comparisons. As a leaf resembling the form of an arrow. To avoid this, terminations united to the substantive word by a hyphen have been used ; as arrow-shape, or arrow-form. I prefer the termination *form*, making the whole a compound adjective noun. There are cases where *like* becomes a convenient termination ; as petal-like stigma in the Iris. Here *form* or *shaped* would be inadequate ; as its resemblance consists rather in texture and general appearance, than in shape.

TER'NATE. Three-fold. In threes. This term is also applied to compound leaves, where 3 leafets proceed from the end of one petiole ; as in the Strawberry. See biternate and triternate.

Terra'neus. Appertaining to the earth.

Ter'reus. Earth-coloured.

TES'SELATE, *tessela'tus.* Chequered.

TESTACEOUS. Shelly, crusty. Applied to insects it generally means light brick-colour, approaching the colour of tanned sheepskin.

Te'ter. Having a disagreeable smell.

TETRADYNAMI. (*Tessares*, four ; *dunamis*, power.) See p. 13.

TETRADYN'AMOUS. Belonging to the class tetradynamia, or varying into it.

Tetrago'nus. Four-cornered.

TETRAGYN'IA. (*Tessares*, four ; *gune*, female.) See p. 16.

TETRAN'DRIA. (*Tessares*, four ; *aner*, male.) See p. 12.

TETRAN'DROUS. Belonging to, or varying into, the class *tetrandria.*

Tetrapet'alous. Four-petalled.

Tetraphyl'lus. Calyx with four leafets.

Tetrapteryg'ia. See wings.

Tetrasper'mus. Having 4 seeds to a flower.

Tetræ'dra. A 4-sided pod.

Thalam'ia. See hollows.

THALLUS. The frond of a lichen, being the bed or general receptacle whereon the proper receptacles are reposed, or in which they are imbedded.

The'ca. The capsules of mosses.

The'cæ. The frond, or whole herbage of lichens. The cases or cells containing the seeds in the disk of scutellæ and some other receptacles of lichens.

THORN, or SPINE. A sharp process from the woody part of a plant. It is an indurated imperfect bud, which, when the plant grows in a rich soil, changes to a branch. Pears bear thorns in a poor soil, which disappear in richer.—Willdenow.

THREAD'-FORM. See filiform.

THREE'-FOLD. See ternate.

THRICE-PIN'NATE. See tripinnate.

THRICE-PINNAT'IFID. See tripinnatifid.

THROAT. See faux. Jaws.

Thyrsioi'des. Flowers disposed in the form of a nosegay.

THYRSE, *thyr'sus.* See panicle.

TIGE. See caulis. The most common stem.

Tincto'rius. Plants suitable for dying or pigments.

TOMENTO'SE, *tomento'sus.* Covered with fine downy or cottony substance matted together. See lanate.

TONG'UE-FORM. See linguiform.

TOOTH'ED. See dentate.

TOOTH'LETTED. See denticulate.

TOP'FORM. See turbinate.

TORN. See lacerated.

TORO'SE, *toro'sus.* Protuberant. Raised in bunches or vein-like protuberances or ridges. Knobs on a toad.

Tor'sio. See intorsion. Turning inwards.

Tor'tilis. See coiled.

TORULO'SE, *torulo'sus.* With swelling ridges ; like the muskmelon.

Trac'heæ. The air-vessels of Grew. They are spiral channels supposed by Grew to be designed for receiving and distributing air in vegetables.

Trail'ing. See procumbent. Lying or hanging down.

TRANSLU'CENT. Transmitting light faintly.

TRANS'VERSE, *trans'versus.* Crosswise. It is applied to a partition when it meets the valves of a pericarp in any other part than at the sutures.

Trapezifor'mis. Having four unequal sides.

TREE, *(arbor.)* A large woody plant. The word *large* is very indefinite ; but the distinction between tree and shrub is very difficult to express. Perhaps *large* and *small*, interpreted according to the rules relating to parts under *Relative proportions*, will serve to distinguish trees and shrubs as well as an elaborate definition. These terms are not used in specific descriptions. See shrub and suffrutex.

TRIAN'DRIA. (*Tris*, thrice ; *aner*, male.) See p. 12.

TRIAN'DROUS. Belonging to, or varying into, the class *Triandria.*

TRIAN'GULAR, *triangula'ris.* Having three angles or corners. It is applied to a leaf with 3 points or corners.

TRIBES, *tri'bus.* See gentes and cotyledon.

TRIBRAC'TEATE. Having three bracts.

Tricæ. See buttons. Button-form.

Trichol'omus. Three-forked. See forked.

Tricoc'cus. A 3-seeded capsule ; or rather 3-grained. It is applied to capsules, which appear as if three of one cell, and one seed each, were grown together.

Tricuspida'tus. Three pointed. See cuspidate.

TRIDEN'TATE. Three-toothed.

Trid'uus. Enduring 3 days.

Trifa'rius. Facing 3 ways.

Trif'idus. Three-cleft. See cleft.

Triflor'rus. Three-flowered.

Trifolia'tus. Three-leaved.

Triglo'chis. Three-barbed. See barb.

Trigo'nus. Three-cornered. See triangular.

TRIGYN'IA. (*Tris*, thrice ; *gune*, female.) See p. 16.

Trij'ugus. Three-paired. Three-yoked.

TRILOBA'CEOUS, *tri'lobus.* Three-lobed. See lobed.

TRILOC'ULAR, *trilocula'ris.* Three-celled.

Triner'vis. Three-nerved. See nerved.

Tri'nus. Leaves in threes.

Triparti'tus. Deeply divided into three parts.

Tripet'alus. Three-petalled.

Triphyl'lus. Three leafets to a calyx.

TRIPIN'NATE, *tripinnatus.* Having the petiole pinnated with other petioles ; and this second range of petioles supporting a third range with leafets.

TRIPINNAT'IFID, *tripinnatif'idus.* A pinnatifid leaf, with the divisions pinnatifid, and those latter divisions pinnatifid again. See pinnatifid and bipinnatifid.

Triplinervis. See trinervis. Three-nerved.

TRIPLY-COM'POUND. See supradecompositus.

Trip'teris. Three-winged.

TRIQUE'TROUS, *trique'ter.* Three-sided.

Trisper'ma. Three-seeded.

Tris'tis. Dull-coloured, melancholy.

TRITER'NATE, *triterna'tus.* When a petiole is divided into three branches ; and the branches again divided, each in three parts ; and on each of the last

divisions three leafets. See bi-ternate.

Trival'vis. A pericarp with three valves.

Trivascula'ris. Having three cup-form cells.

TRIV'IAL NAME, *trivia'lia no'mina.* The name of a species, not including the descriptive terms. President Smith says, *trivial name* is now superfluous; as specific name is no longer used for the descriptive terms. See specific name.

TRUN'CATE, *trunca'tus.* The end appearing as if cut off. Terminating in a strait edge, either perpendicularly or obliquely transverse.

TRUNK, *trun'cus.* The bole of a tree. See bole. It is also applied to the stem of plants not woody; and sometimes to the caudex of a root.

TUBE. The lower hollow cylinder of a monopetalous corol.

TU'BERCLES, *tuber'cula.* That kind of receptacle of lichens, which is spherical or slightly conic, nearly closed, crustaceous, black; more or less immersed in the surface of the crustaceous frond, which it elevates; or sometimes it is exposed, being merely sessile. Each contains a ball, or mass, of connected seeds, destitute of cells, enveloped in a common membrane. The whole mass of seeds is at length discharged together by an orifice at the top of the tubercle. We often find these tubercles after the seeds are discharged.

TUBER'CULATE, *tuber'cula.* See tubercles. This word is sometimes applied to rough points on leaves, &c.

TU'BEROUS, *tubero'sus.* Roots, which are thick and fleshy, but not of any regularly globular form. They are *knobbed*, as potatoe; *oval*, as orchis, and some anemones; *abrupt*, as the bird-foot violet; *fascicled*, as the asparagus.

TU'BULAR, *tubula'tus.* Having a tube, or being in the form of a tube.

TU'BULOUS, TUBULO'SE, *tubulo'sus.* That corol of a compound flower, which forms a whole tube, not a ligulate floret. It is also applied to a perianth, if the whole or the lower part is a hollow cylinder.

TUFT'ED. See fascicle. In a bunch or bundle.

TU'NICATE. See coated. Covered as with a garment.

TUR'BINATE, *turbina'tus.* Top-form. A cone with the point downwards.

TUR'GID, *tur'gidus.* Thickened, swollen, but not inflated.

TU'RION, *tu'rio.* See gemmation. Budding.

TWIN. Two connected or growing together.

TWI'NING. Ascending spirally. See dextrorsum and sinistrorsum.

TWIST'ED. See coiled.

TWO-RANK'ED, or TWO-ROW'ED. See distichus.

V.

Vagi'na. Sheath. That prolongation of a leaf, which forms a cylinder around the stem. See sheath.

Vagi'nans. Sheathing.

Vagina'tus. Sheathed.

Valva'tus. Resembling the valves of a glume.

VALVE, *val'va.* The several pieces of a pericarp, which separate naturally on ripening, are called valves. Also the leaves, or chaffs, of a glume. Each piece is called a valve. This name is sometimes applied to the scales, which close the tube in some corols.

VAL'VELET, *val'vula.* Little valve.
Variega'tus. Variously coloured.
VARI'ETY, *vari'etas.* The changes produced among plants of the same species by accidental causes; as by soil, situation, culture, climate, &c. These changes respect *magnitude, fullness* of flowers, *crisping* of leaves, *colour, taste* and *smell.* If the same kind of plant can possibly be produced from the seed of other kinds, these are but varieties of the same species. All apples are but *varieties* of the same species; because if the seeds of a sour apple be planted, they will produce trees bearing sour, sweet, tart, red, green, large and small apples promiscuously. But the quince is a different species; because it cannot possibly be produced from apple seeds.
Va'sa, VESSELS. The sap-vessels of vegetables have formed the subject of much inquiry and discussion. The best summary of the various theories may be found in Smith's Elements. See sap and camb. By cutting very thin transverse segments of aquatic plants, and holding them to the light, considerable practical knowledge may be obtained on this subject.
VAUL'TED. Arched over like the roof of the mouth; as the upper lip of some labiate corols.
VEG'ETABLE. An organized substance, whose procreative organs decay before the individual dies. As in the pea; the stamens and pistils decay before the rest of the plant. It is divided into the fructification, root and herbage. See natural history.
VEG'ETABLE KING'DOM. This is the name Linneus gives to all the subjects of the science of botany. See Natural history.
VEG'ETABLE SUB'STANCE. The *elementary principles* of vegetables are carbon, hydrogen and oxygen; some contain nitrogen.

The *proximate principles* are very complicated, and belong to the department of chemistry.
VEIL. See calyptra, and volva.
Vel'lus. Fleecy, or a fleece. This term is also applied to that kind of *clouds* which float swiftly about the sky, without any strait side, and resemble an open fleece of wool. See clouds.
VEIN'ED, VENO'SE, *venosus.* A leaf with the ribs or tendinous fibres variously branched.
VENT. Aperture for the discharge of both feces and urine.
VENTRICLES. The large cavities of the heart. All animals of the classes mammalia and aves have two ventricles to the heart —amphibia and pisces but one.
VENTRICO'SE, *ventrico'sus.* Swelling out as if blown up with wind. Or rather bellied out. See inflated.
Ventriculosus. A little ventricose.
VERMES. All avertebral animals, excepting insects.—Linneus.
Verna'lis. Coming forth early in the spring.
VERNA'TION, *verna'tio.* See foliation.
Verru'cæ. Variously formed protuberances, solid and usually smooth, on the crust of some lichens. Sometimes the receptacles grow on them.
VERRUCO'SE, *verucosus.* Warty. Having little warty knob-like substances on the surface.
VER'SATILE, *versa'tilis.* Lying horizontally and moving freely on a point. Particularly applied to anthers lying on the point of the filaments.
Ver'tex. The summit.
VER'TICAL, *vertica'lis.* Standing or hanging up and down at right angles with the horizon; or parallel to the stem.

VERTEBRAL ANIMALS. One of the four grand divisions of animals, characterised by having back bones. Avertebral animals have no back bones, as oysters, lobsters, &c.

Verticilla'tus. See whorled.

VESIC'ULAR, *vesicula'ris*, Containing, or consisting of, a cellular substance.

VES'SELS. See vasa.

Vexil'lum. See banner of pea-flowers.

VIBRISSAE. Smellers. Hairs of a peculiar kind, generally very stiffy, growing on or near the nostrils.

Vigil'iæ planta'rum. The determined hours of the day, when certain plants expand and shut their flowers. See sleep.

VILLO'SE, *villo'sus.* Having a superficial covering of long soft whitish hairs. The calyptra of some mosses consist wholly of a mat of hairs.

Vil'lus. Fine soft hairs.

Vi'men. A withe. A twig which is slender and flexible.

Viola'ceous. Violet coloured.

Vires'cens. Inclining to green.

VIR'GATE, *virga'tus.* Wand-like. Slender rod.

Vir'idis. Green.

Virgul'tum. Small twig.

Viro'sus. Nauseous disgusting smell.

VIS'CID, *vis'cidus.* Covered superficially with a tenaceous juice.

VISCID'ITY, *visco'sitas.* Clamminess. Possessing an adhesive quality.

Vitel'linus. Yellow with a tinge of red.

Vitel'lus. A thin substance in the seeds of some plants, closely connected with the embryo, but never rising out of the ground with it in germination. It is never in plants with genuine ascending cotyledons; and perhaps it may serve to perform the functions of cotyledons. It is between the albumen and embryo, when albumen is present. It composes the bulk of the seeds of mosses and ferns.—Smith.

Vit'reus. Glassy, colourless. See hyaline.

VIVIP'AROUS. Producing its offspring alive, either by bulbs instead of seeds, or by seeds germinating on the plant. It is applied to animals produced alive, not from the egg.

Uligino'sus. Growing in damp places.

Ul'na. Arm's length.

UM'BEL, *umbel'la.* That kind of inflorescence, where several flower-stems diverge from one place, like the braces of an umbrella; bearing florets on their extremities. If these flower-stems are subdivided, a *partial* umbel is formed.

UMBELLIF'EROUS. Bearing umbels; as carrot, dill, fennel.

UM'BELLET, *umbel'lula.* A partial or lesser umbel.

Umbi'licus. A naval. Applied to shells, it means the perforation in the direction of the spire, as in the nerita, &c.

UMBIL'ICATE, *umbilica'tus.* Navelled. Having a kind of central roundish hollow or protuberance; as on the end of an apple, or of a pompion.

Umbona'tus. See bossed.

Umbrinus. Umber colour. Snuff-brown. A brown shade.

Unangula'tus. One-angled.

UNARM'ED. Having no thorns nor prickles.

Uncia'lis. As long as the thumb-nail.

UN'CINATE, *uncina'tus.* Hooked at the end. See hamus.

Unctuo'sus. Greasy, unctuous.

UN'DULATE, *undula'tus* or *unda'tus.* Wavy. Rising and falling, or

extending and receding in waves.

UN'DERSHRUB. See suffrutex.

UNDIVI'DED. See indivisus.

UNE'QUAL. The parts not corresponding in size, form and duration.

UNGUIC'ULATE, *unguicula'tus*. A petal with a claw.

Un'guis. A claw, which see.

UN'GULATE, *ungula'tus*. In the form of a horse's hoof; as the common touch-wood, (boleteus igniarius.)

Unicapsula'ris. Having one capsule to each flower.

U'nicus. Single. Only one.

Uniflo'rus. One-flowered.

Unifor'mis. All parts alike, or corresponding.

Unilabia'tus. One-lipped.

UNILAT'ERAL, *unilatera'lis*. See one-sided.

Unilocula'ris. One-celled.

UNINER'VIAL. One-nerved.

Unisex'us. Either staminate or pistillate, not perfect.

Unival'vis. One-valved.

Univascula'ris. Having one cup-form cell.

UNIVER'SAL, *universa'lis*. See partial, to which it is applied.

VOL'VA. The ring or wrapper of some fungous plants, which contracts in size as the plant grows older; as the mushroom. Willdenow calls that the volva only which encloses the fungus in the young state; and remains close upon the ground ever after. The ring around the stem above, he calls *annulus*. See ring.

Volu'bilis. See twining.

UPRI'GHT. See erect.

URCEOLA'TE, *urceolatus*. Bellying out like a pitcher, and not contracting much at top.

U'rens. Stinging, armed with stings.

URN'-FORM. Swelling in the middle and contracting at the top; as the calyx of the rose.

UROPYGIAL. Several long feathers above, on each side of the tail, differing in form from the others.

Ustila'go. Smut in grain.

U'TRICLES. The little bag-like reservoirs for sap, air, &c.

Utric'ulus. A little bladder.

Utrin'que acu'tus. Sharpening at both ends.

—— *glab'er villo'sus*, &c. sleek, downy, &c. both sides.

W.

WAND-LIKE. See virgatus.

WATTLES. Pendant fleshy appendages under the chin of some swine and other animals.

WA'VED, or WA'VY. See undulate.

WEDG'E-FORM. Obovate with straitish sides.

WHEEL'-FORM. A monopetalous corol with a spreading border, and an extremely short tube.

WHORL'ED. Surrounding the stem in numbers at intervals; as the leaves of bedstraw, and the flowers of motherwort. It is applied to the spiral convolutions of univalve shells.

WINGS. The two side petals in a papilionaceous corol.

It is also applied to the membranes affixed to seeds or pericarps. *Monopterygia*, 1-winged. *Dipterygia*, 2-winged. *Tripterygia*, 3-winged. *Tetrapterygia*, 4-winged. *Pentapterygia*, 5-winged. *Polypterygia*, many-winged.

WITHE. See Vimen. A flexible wand.

WITH'ERING. Having a shrivelled and decaying appearance though not actually in a state of decay; as the flowers of elm, (ulmus.)

WOOD. The most solid part of trunks and roots of trees and shrubs. It is also applied to the part of herbaceous plants between the bark and pith.

Wood'y. Not herbaceous.
Wool'ly. See lanate.
Wrink'led. See rugose.
Wri'thed. See coiled. Twisted.

Z.

Zigzag. See flexuose.

Zoology. The science of animals.
Zoophytes. Animal-plants. The radiated animals, which resemble plants in many respects. Such as the sea fan, &c.